# 2 DESCRIPTION OF ALTERNATIVES

This chapter describes five alternatives for development under the NASA Ames Development Plan (NADP). The sections that follow describe and evaluate the characteristics of each of the alternatives with respect to land use, job generation, open space, security, and circulation. The baseline against which the alternatives are evaluated and the cumulative projects in the area are also described. The potential environmental impacts of each alternative are analyzed in detail in *Chapter 4: Environmental Consequences*.

The five alternatives described in this chapter are summarized in Table 2-1 and consist of the following:

- **Alternative 1: The No Project Alternative.** Under the No Project Alternative, no new development would be proposed for Ames Research Center at this time. However, NASA would implement several projects already approved, as described in Section A, below, so that "No Action," the typically-employed term under NEPA, would not accurately describe the baseline condition. In addition, "No Project" is the CEQA equivalent of "No Action" and so very familiar to the public reading the document. Thus Ames Research Center staff have determined that this alternative should be referred to as "No Project" rather than "No Action" in order to minimize confusion for the public.
- **Alternative 2.** Alternative 2 proposes to develop approximately 363,000 square meters (3.9 million square feet) of new space in the NRP, Bay View, and Eastside/Airfield areas. Within the NRP area, there would be approximately 192,000 square meters (2.1 million square feet) of new educational, office, research and development, museum, conference center, housing and retail development, approximately 52,000 square meters (560,000 square feet) of existing non-historic structures would be demolished, and approximately 46,000 square meters (500,000 square feet) of existing space would be renovated. Alternative 2 proposes approximately 121,000 square meters (1.3 million square feet) of new educational and housing development in the Bay View area, and approximately 51,000 square meters (550,000 square feet) of new low-density research and development and light industrial space, in addition to the renovation of Hangars 2 and 3, in the Eastside/Airfield area. Total

build out under this alternative would be approximately 845,000 square meters (9.1 million square feet).

— **Alternative 3.** Based on the ideas of Traditional Neighborhood Design, Alternative 3 would create a new mixed-use development within the NASA Research Park area. Alternative 3 proposes the addition of approximately 284,000 square meters (3 million square feet) of new educational, office, research and development, museum, conference center, housing and retail development, the demolition of approximately 52,000 square meters (560,000 square feet) of non-historic structures, and the renovation of approximately 46,000 square meters (500,000 square feet) of existing space. Alternative 3 does not propose any new construction in the Bay View or Eastside/Airfield areas, although Hangars 2 and 3 in the latter area would be renovated for low-intensity research and development or light industrial uses. The total build out under this alternative would be approximately 760,000 square meters (8.2 million square feet).

— **Alternative 4.** Alternative 4 would concentrate more of the new development in the Bay View area than would the other alternatives, while creating less dense development in the NRP area. Alternative 4 proposes the addition of approximately 145,000 square meters (1.6 million square feet) of new educational, office, research and development, museum, conference center, housing and retail space in the NRP area, as well as the demolition of approximately 52,000 square meters (560,000 square feet) of non-historic structures and the renovation of approximately 46,000 square meters (500,000 square feet) of existing space. Alternative 4 also proposes approximately 251,000 square meters (2.7 million square feet) of new office, research and development, laboratory, educational, and student/faculty housing development in the Bay View area. In the Eastside/Airfield area, Alternative 4 proposes approximately 62,000 square meters (670,000 square feet) of new light industrial, research and development, office and educational facility development, as well as the renovation of the historic hangars. The total build out under Alternative 4 would be approximately 940,000 square meters (10.1 million square feet).

— **Alternative 5: The Preferred Alternative.** Under Alternative 5, there would be some new construction in each of the four development areas, but it would be concentrated primarily in the NRP area. Alternative 5 proposes the addition of approximately 192,000 square meters (2.1 million square feet) of new educational, office, research and development, museum, conference center, housing and retail space in the NRP Area, as well as the demolition of approximately 52,000 square meters (560,000 square feet) of non-historic structures and the renovation of approximately 56,000 square meters (600,000 square feet) of existing space. It also proposes the addition of approximately 93,000 square meters (1 million square feet) of new development in the Bay View area, primarily for housing. In the Eastside/Airfield area, Alternative 5 proposes approximately 1,100 square meters (12,000 square feet) of new space in a new control tower. Finally, in the Ames Campus area, Alternative 5 includes the demolition of approximately 37,000 square meters (400,000 square feet) of existing buildings to make way for 46,000 square meters (500,000 square feet) of high density office and research and development space. Total build out under Alternative 5 would be approximately 777,000 square meters (8.4 million square feet).

— Under Mitigated Alternative 5, development would be the same as in Alternative 5 above, with several exceptions. A summary of these exceptions is provided in section C.5.d of this chapter. A full description and analysis is provided in Chapter 5 of this Final EIS.

## *A. Baseline*

In this EIS, the "baseline" is defined as future conditions that will occur at Ames Research Center even if the NADP is not adopted and implemented. The baseline level of development assumed at Ames Research Center in this EIS consists of existing conditions at Ames Research Center plus new development already approved under two other environmental documents:

— The California Air National Guard 129th Rescue Wing, Moffett Federal Airfield Master Plan , 1998, recognizes 303,634 square feet of proposed and existing facilities in the Eastside Airfield.

— The 1994 Comprehensive Use Plan and its Environmental Assessment (CUP EA) comprised NASA's first plan for Moffett Field when it was acquired from the Navy. Under the CUP EA, NASA is now preparing to construct an advanced space research lab, related office and research development space, a temporary museum facility, and a childcare center. Approximately 33,000 square meters (350,000 square feet) of non-historic buildings will be demolished to make way for new buildings under the CUP EA. Additionally, approximately 10,500 square meters (113,000 square feet) will be remodeled and occupied by universities, the Ames Technology Commercialization Center (ATCC) and others.

  In total, the baseline includes approximately 534,000 square meters (5,749,000 square feet) of existing and new buildings, plus the CANG facilities, for a total of 561,000 square meters (6 million square feet).

**1. Land Use**

Development cleared under the CANG and CUP EAs will consist of the following elements:

— **The laboratory** will be a research facility focusing on advanced research in information technology, biotechnology and nanotechnology. This facility will include approximately 8,400 square meters (90,000 square feet) of research, office and administrative space, as well as a 2,800-square meter (30,000-square foot) auditorium for a total of 11,000 square meters (120,000 square feet).

— The development currently planned with **Lockheed Martin**, will consist of approximately 56,000 square meters (600,000 square feet) of office and research and development space.

# Table 2-1: Baseline and Proposed Alternative Analysis Breakdown

## Alternative One

| | Site | | Existing Facilities | | Current Baseline Projects under the CUP and CANG EAs (FONSI) | | | | | | Baseline Facilities | | Proposed Projects under the EIS | | | | | | Totals | Totals | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hectares | Acres | Existing (MS) | Existing (SF) | Demo (MS) | Demo (SF) | Reno (MS) | Reno (SF) | New (MS) | New (SF) | Existing (MS) | Existing (SF) | Demo (MS) | Demo (SF) | Reno (MS) | Reno (SF) | New (MS) | New (SF) | Total (MS) | Total (SF) | Net Change (MS) | Net Change (SF) |
| NASA Research Park | 86.20 | 213.00 | 146,533 | 1,577,269 | 31,801 | 342,307 | 11,334 | 122,000 | 71,071 | 765,000 | 185,803 | 1,999,962 | - | - | - | - | - | - | 185,803 | 1,999,962 | - | - |
| Eastside / Airfield | 385.26 | 952.00 | 79,863 | 859,636 | - | - | - | - | - | - | 79,863 | 859,636 | - | - | - | - | - | - | 79,863 | 859,636 | - | - |
| Bay View Site | 38.24 | 94.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ames Campus | 94.70 | 234.00 | 268,458 | 2,889,658 | 1,115 | 12,000 | - | - | 1,115 | 12,000 | 268,458 | 2,889,658 | - | - | - | - | - | - | 268,458 | 2,889,658 | - | |
| | 604.40 | 1,493.50 | 494,854 | 5,326,563 | 32,916 | 354,307 | 11,334 | 122,000 | 72,186 | 777,000 | 534,123 | 5,749,256 | - | - | - | - | - | - | 534,123 | 5,749,256 | - | - |
| CANG EA * | 44.52 | 110.00 | 20,717 | 223,000 | 232 | 2,500 | 74 | 800 | 5,946 | 64,000 | 26,431 | 284,500 | - | - | - | - | - | - | 26,431 | 284,500 | - | |

## Alternative Two

| | Site | | Existing Facilities | | Current Baseline Projects under the CUP and CANG EAs (FONSI) | | | | | | Baseline Facilities | | Proposed Projects under the EIS | | | | | | Totals | Totals | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hectares | Acres | Existing (MS) | Existing (SF) | Demo (MS) | Demo (SF) | Reno (MS) | Reno (SF) | New (MS) | New (SF) | Existing (MS) | Existing (SF) | Demo (MS) | Demo (SF) | Reno (MS) | Reno (SF) | New (MS) | New (SF) | Total (MS) | Total (SF) | Net Change (MS) | Net Change (SF) |
| NASA Research Park | 86.20 | 213.00 | 146,533 | 1,577,269 | 31,801 | 342,307 | 11,334 | 122,000 | 71,071 | 765,000 | 185,803 | 1,999,962 | 52,209 | 561,972 | 46,452 | 500,000 | 191,567 | 2,062,010 | 325,161 | 3,500,000 | 139,358 | 1,500,038 |
| Eastside / Airfield | 385.26 | 952.00 | 79,863 | 859,636 | - | - | - | - | - | - | 79,863 | 859,636 | - | - | 72,521 | 780,613 | 51,097 | 550,000 | 130,959 | 1,409,636 | 51,097 | 550,000 |
| Bay View Site | 38.24 | 94.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 120,774 | 1,300,000 | 120,774 | 1,300,000 | 120,774 | 1,300,000 |
| Ames Campus | 94.70 | 234.00 | 268,458 | 2,889,658 | 1,115 | 12,000 | - | - | 1,115 | 12,000 | 268,458 | 2,889,658 | - | - | 46,452 | 500,000 | - | - | 268,458 | 2,889,658 | - | - |
| | 604.40 | 1,493.50 | 494,854 | 5,326,563 | 32,916 | 354,307 | 11,334 | 122,000 | 72,186 | 777,000 | 534,123 | 5,749,256 | 52,209 | 561,972 | 165,424 | 1,780,613 | 363,438 | 3,912,010 | 845,352 | 9,099,294 | 311,229 | 3,350,038 |
| CANG EA * | 44.52 | 110.00 | 20,717 | 223,000 | 232 | 2,500 | 74 | 800 | 5,946 | 64,000 | 26,431 | 284,500 | - | - | - | - | - | - | 26,431 | 284,500 | - | |

## Alternative Three

| | Site | | Existing Facilities | | Current Baseline Projects under the CUP and CANG EAs (FONSI) | | | | | | Baseline Facilities | | Proposed Projects under the EIS | | | | | | Totals | Totals | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hectares | Acres | Existing (MS) | Existing (SF) | Demo (MS) | Demo (SF) | Reno (MS) | Reno (SF) | New (MS) | New (SF) | Existing (MS) | Existing (SF) | Demo (MS) | Demo (SF) | Reno (MS) | Reno (SF) | New (MS) | New (SF) | Total (MS) | Total (SF) | Net Change (MS) | Net Change (SF) |
| NASA Research Park | 86.20 | 213.00 | 146,533 | 1,577,269 | 31,801 | 342,307 | 11,334 | 122,000 | 71,071 | 765,000 | 185,803 | 1,999,962 | 52,209 | 561,972 | 46,452 | 500,000 | 284,470 | 3,062,010 | 418,064 | 4,500,000 | 232,261 | 2,500,038 |
| Eastside / Airfield | 385.26 | 952.00 | 79,863 | 859,636 | - | - | - | - | - | - | 79,863 | 859,636 | - | - | 72,521 | 780,613 | - | - | 79,863 | 859,636 | - | - |
| Bay View Site | 38.24 | 94.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ames Campus | 94.70 | 234.00 | 268,458 | 2,889,658 | 1,115 | 12,000 | - | - | 1,115 | 12,000 | 268,458 | 2,889,658 | - | - | 46,452 | 500,000 | - | - | 268,458 | 2,889,658 | - | - |
| | 604.40 | 1,493.50 | 494,854 | 5,326,563 | 32,916 | 354,307 | 11,334 | 122,000 | 72,186 | 777,000 | 534,123 | 5,749,256 | 52,209 | 561,972 | 165,424 | 1,780,613 | 284,470 | 3,062,010 | 766,385 | 8,249,294 | 232,261 | 2,500,038 |
| CANG EA * | 44.52 | 110.00 | 20,717 | 223,000 | 232 | 2,500 | 74 | 800 | 5,946 | 64,000 | 26,431 | 284,500 | - | - | - | - | - | - | 26,431 | 284,500 | - | |

## Alternative Four

| | Site | | Existing Facilities | | Current Baseline Projects under the CUP and CANG EAs (FONSI) | | | | | | Baseline Facilities | | Proposed Projects under the EIS | | | | | | Totals | Totals | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hectares | Acres | Existing (MS) | Existing (SF) | Demo (MS) | Demo (SF) | Reno (MS) | Reno (SF) | New (MS) | New (SF) | Existing (MS) | Existing (SF) | Demo (MS) | Demo (SF) | Reno (MS) | Reno (SF) | New (MS) | New (SF) | Total (MS) | Total (SF) | Net Change (MS) | Net Change (SF) |
| NASA Research Park | 86.20 | 213.00 | 146,533 | 1,577,269 | 31,801 | 342,307 | 11,334 | 122,000 | 71,071 | 765,000 | 185,803 | 1,999,962 | 52,209 | 561,972 | 46,452 | 500,000 | 145,115 | 1,562,010 | 278,709 | 3,000,000 | 92,907 | 1,000,038 |
| Eastside / Airfield | 385.26 | 952.00 | 79,863 | 859,636 | - | - | - | - | - | - | 79,863 | 859,636 | - | - | 72,521 | 780,613 | 62,245 | 670,000 | 142,108 | 1,529,636 | 62,245 | 670,000 |
| Bay View Site | 38.24 | 94.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 250,838 | 2,700,000 | 250,838 | 2,700,000 | 250,838 | 2,700,000 |
| Ames Campus | 94.70 | 234.00 | 268,458 | 2,889,658 | 1,115 | 12,000 | - | - | 1,115 | 12,000 | 268,458 | 2,889,658 | - | - | 139,355 | 1,500,000 | - | - | 268,458 | 2,889,658 | - | - |
| | 604.40 | 1,493.50 | 494,854 | 5,326,563 | 32,916 | 354,307 | 11,334 | 122,000 | 72,186 | 777,000 | 534,123 | 5,749,256 | 52,209 | 561,972 | 258,327 | 2,780,613 | 458,199 | 4,932,010 | 940,113 | 10,119,294 | 405,990 | 4,370,038 |
| CANG EA * | 44.52 | 110.00 | 20,717 | 223,000 | 232 | 2,500 | 74 | 800 | 5,946 | 64,000 | 26,431 | 284,500 | - | - | - | - | - | - | 26,431 | 284,500 | - | |

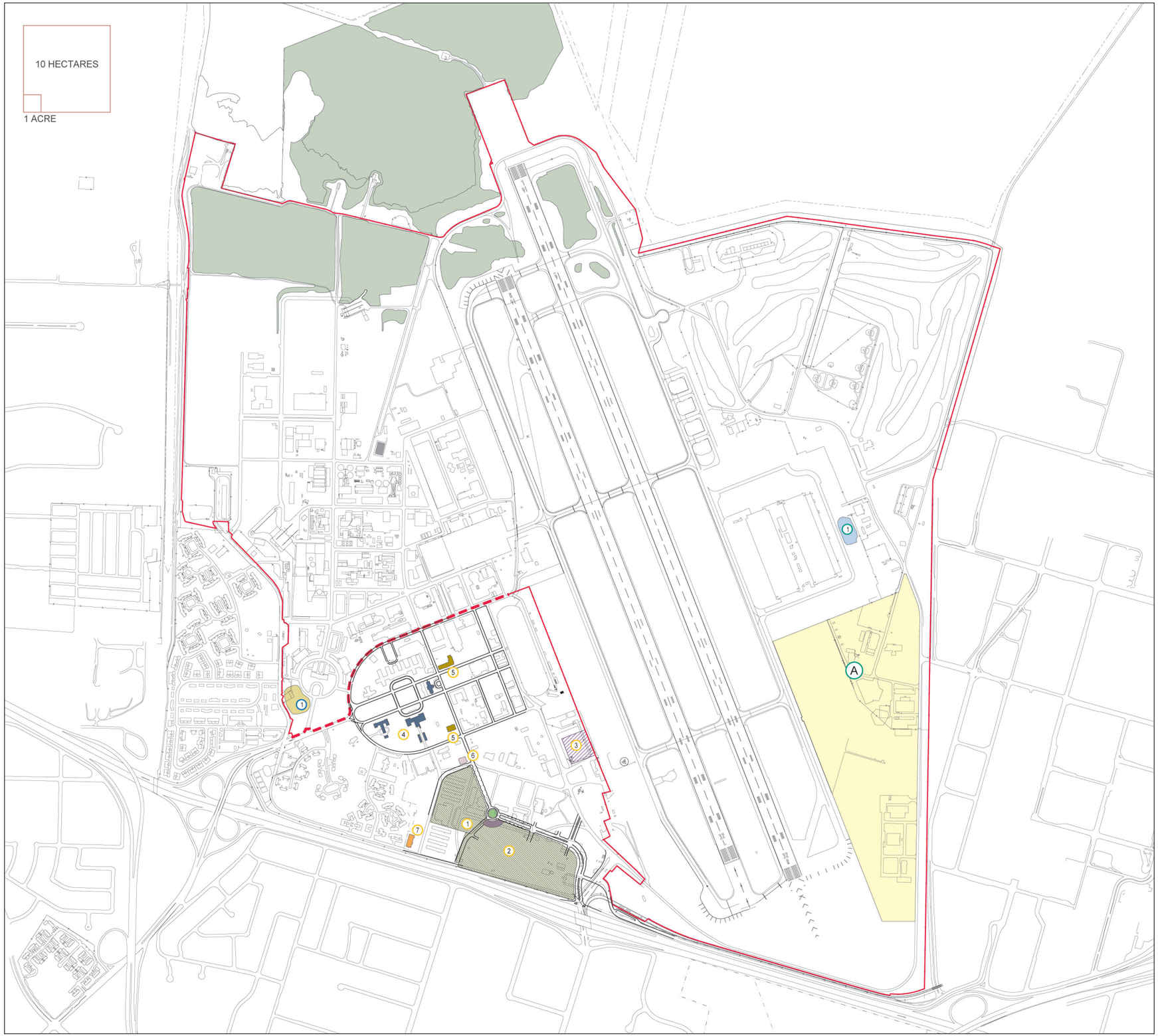
## Alternative Five

| | Site | | Existing Facilities | | Current Baseline Projects under the CUP and CANG EAs (FONSI) | | | | | | Baseline Facilities | | Proposed Projects under the EIS | | | | | | Totals | Totals | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hectares | Acres | Existing (MS) | Existing (SF) | Demo (MS) | Demo (SF) | Reno (MS) | Reno (SF) | New (MS) | New (SF) | Existing (MS) | Existing (SF) | Demo (MS) | Demo (SF) | Reno (MS) | Reno (SF) | New (MS) | New (SF) | Total (MS) | Total (SF) | Net Change (MS) | Net Change (SF) |
| NASA Research Park | 86.20 | 213.00 | 146,533 | 1,577,269 | 31,801 | 342,307 | 11,334 | 122,000 | 71,071 | 765,000 | 185,803 | 1,999,962 | 52,209 | 561,972 | 56,080 | 603,635 | 191,567 | 2,062,010 | 325,161 | 3,500,000 | 139,358 | 1,500,038 |
| Eastside / Airfield | 385.26 | 952.00 | 79,863 | 859,636 | - | - | - | - | - | - | 79,863 | 859,636 | - | - | - | | 1,115 | 12,000 | 80,978 | 871,636 | 1,115 | 12,000 |
| Bay View Site | 38.24 | 94.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 92,903 | 1,000,000 | 92,903 | 1,000,000 | 92,903 | 1,000,000 |
| Ames Campus | 94.70 | 234.00 | 268,458 | 2,889,658 | 1,115 | 12,000 | - | - | 1,115 | 12,000 | 268,458 | 2,889,658 | 37,161 | 400,000 | - | - | 46,452 | 500,000 | 277,748 | 2,989,658 | 9,290 | 100,000 |
| | 604.40 | 1,493.50 | 494,854 | 5,326,563 | 32,916 | 354,307 | 11,334 | 122,000 | 72,186 | 777,000 | 534,123 | 5,749,256 | 89,370 | 961,972 | 56,080 | 603,635 | 332,036 | 3,574,010 | 776,790 | 8,361,294 | 242,666 | 2,612,038 |
| CANG EA * | 44.52 | 110.00 | 20,717 | 223,000 | 232 | 2,500 | 74 | 800 | 5,946 | 64,000 | 26,431 | 284,500 | - | - | - | - | - | - | 26,431 | 284,500 | - | - |

* Preapproved pursuant to the CANG EA Master Plan not included in totals

FIGURE 2.1

# BASELINE LAND USE PLAN




LEGEND:

- Lab Project
- Historic District Renovation
- ARC Childcare
- ATCC Renovation
- Research / Girvan
- Computer Museum
- UCSC Offices
- Supporting Retail
- CANG
- TRW Vehicle Storage
- Open Space
- Wetlands
- Relocated Fence
- Existing Fence

*Denotes Parcel Number as Noted on Table 2-2*

- (1) Ames Campus
- (1) NASA Research Park
- (1) Eastside / Airfield

DMJMH+N EDAW

N

0 76m 152m 305m
0 250ft 500ft 1000ft

**NASA AMES RESEARCH CENTER**
NASA AMES DEVELOPMENT PLAN FINAL EIS

## Table 2-2: Alternative 1 (Baseline) - Land Use Summar

| Parcel | | Land Use | | Parcel Area | Parcel Area (AC) | FAR | Developable Area | Developable Area (SF) |
|---|---|---|---|---|---|---|---|---|
| Ames Campu | E | ARC Facilities | | 93.53 | *230.92* | 0.29 | 267,343 | *2,877,658* |
| | 1 | ARC Childcare | * | 1.25 | *3.08* | 0.09 | 1,115 | *12,000* |
| | | **Sub Total** | | **94.8** | *234.0* | | **268,458** | *2,889,658* |
| NASA Research Park | E | NRP Facilities | | 73.47 | *181.5* | 0.14 | 103,862 | *1,117,962* |
| | 1 | Lab Project | * | 3.36 | *8.31* | N/A | 11,148 | *120,000* |
| | 2 | Lab Project | * | 7.90 | *19.53* | 0.71 | 55,742 | *600,000* |
| | 3 | CMHC Temp. Buildi | * | 1.46 | *3.61* | 0.29 | 4,181 | *45,000* |
| | 4 | Historic Dist Reno | * | N/A | *N/A* | N/A | 8,268 | *89,000* |
| | 5 | ATCC Building Renc | * | N/A | *N/A* | N/A | 1,765 | *19,000* |
| | 6 | UCSC Building Renc | * | N/A | *N/A* | N/A | 465 | *5,000* |
| | 7 | Research / Girvan | * | N/A | *N/A* | N/A | 836 | *9,000* |
| | | **Sub Total** | | **86.2** | *213.0* | | **186,267** | *2,004,962* |
| Eastside / Airfield | E | ESAF Facilities | | 384.86 | *951.00* | 0.02 | 79,863 | *859,636* |
| | 1 | TRW Vehicle | * | 0.40 | *1.00* | N/A | 0 | *0* |
| | | **Sub Total** | | **385.3** | *952.0* | | **79,863** | *859,636* |
| | A | CANG | ** | | | | | |
| Bay View | E | Bay View | | 38.24 | *94.50* | N/A | 0 | *0* |
| | | **Sub Total** | | **38.2** | *94.5* | | **0** | *0* |
| Total | | | | | | | **534,588** | ####### |
| | A | CANG | ** | 44.52 | *110.00* | N/A | 6,020 | *64,800* |
| | | Existing CANG | | N/A | N/A | N/A | 20,717 | *223,000* |

* *"Preapproved pursuant to the 1994 NASA/MFA Environmental Assessment - Comprehensive Use Plan"*

** *"Preapproved pursuant to the CANG EA Master Plan - Square footage not included in totals*

- The construction of a 1,100 square meter (12,000 square foot) **childcare center** in the Ames Campus, and of a 4,200 square meter (45,000 square foot) temporary building for the Computer History Museum.
- The **renovation** of approximately 8,000 square meters (89,000 square feet) of space in historic buildings within the NRP area, and renovation of approximately 2,200 square meters (24,000 square feet) of non-historic space in Buildings 555, 566 and 14.
- **Demolition** of 31,800 square meters (342,307 square feet) of non-historic buildings in the NRP area to make way for new buildings under the CUP EA, and of approximately 2,300 square meters (25,000 square feet) in two non-historic buildings as cleared under the CANG EA .
- The construction of a **new roadway** to serve the Laboratory and the Lockheed Martin Development. The Ellis Street entrance to Ames Research Center will be reconfigured to make it the main approach to the NRP area.
- **Relocation of the security fence** to an alignment along Clark Memorial Drive, Bushnell Road and Cody Road to open the NRP area to the public. This would require the closure of several existing driveways serving parking areas. In order to preserve security in the Eastside/Airfield area, a new gate will be constructed on Macon Road.
- **Relocation of the main gate** from Moffett Boulevard/Clark Memorial Drive to Arnold Avenue in order to provide secure access into the Ames Campus area. This would require the realignment and widening of Arnold Avenue, and the construction of a new gate on McCord Avenue north of Bushnell Road.
- The construction of approximately 5,900 square meters (64,000 square feet) of **new space to serve CANG** in a hangar and a small hazardous materials storage building.
- **Relocation of the CANG Motor Pool** from the NRP area to the Eastside/Airfield area to provide room for the lab project. This action was

cleared under the CANG EA, but would be taking place earlier than was described in that document.

— The granting of an **easement** for a future segment of the **Bay Trail** along Ames Research Center's northeastern border. In order for this easement to be safe for public use, the ordnance in the affected munitions bunkers would be relocated to existing bunkers within the golf course in the Eastside/Airfield area.

In addition, the relocation of the Commissary and Exchange buildings, which may be rebuilt as part of a separate project before development begins on their current sites, are assumed to be part of the baseline. This new development would only occur after the Department of Defense prepares separate NEPA documentation prior to construction of a new Commissary and Exchange. The shift in trip distribution as a result of the proposed new location is included in the traffic analysis of the baseline in this EIS.

The authorized population at Ames Research Center under the CUP EA is 10,610.

Under baseline conditions, there will be no new housing units constructed. As in the proposed project, the airfield will continue to be restricted to government use, with no cargo, general aviation, or commercial uses allowed.

**2. Open Space**

Under baseline conditions, the central green in Shenandoah Plaza and the existing burrowing owl habitat will be preserved. Approximately 4.2 hectares (10.3 acres) of athletic fields abutting Highway 101 will be removed to allow the development of the Laboratory and Lockheed Martin Development under the CUP EA, described above. The southeastern portion of the Eastside/Airfield area will be developed for use by CANG under the CANG EA, described above. There will be no impacts on any of the existing open spaces within the Ames Campus and Bay View areas. The swimming pool and

gymnasium in the NRP area will be retained. NASA will grant an easement for a future segment of the Bay Trail along ARC's northern border.

**3. Security and Circulation**

As described above, in order to enable public access to the new development under the CUP EA the baseline includes moving the security fence to the outer edges of the NRP area. The Ellis Street gate area will be reconfigured to make it the primary entrance to the NRP area, and a new gate constructed on Macon Road to provide secure access to the Eastside/Airfield area. A new roadway will be constructed to link the Laboratory and Lockheed Martin Development to the Ellis Street entrance. In addition, the existing gate at Moffett Boulevard/Clark Memorial Drive would be relocated to Arnold Avenue in order to provide secure access into the Ames Campus area. This would require the realignment and widening of Arnold Avenue, and the construction of a new gate on McCord Avenue north of Bushnell Road.

The current TDM program at Ames Research Center will be maintained and expanded to include the new development under the CUP EA. This program includes flexible work hours, preferential carpool parking, subsidies for public transportation for federal employees, bike lockers, free bicycles for internal use by employees, and an internal shuttle that also serves the Caltrain station.

**4. Infrastructure**

Utility infrastructure will be installed under baseline conditions to serve new development that will occur within the NRP under the CUP EA. In general, all existing utility systems within the development area will be replaced with new systems that follow the baseline street layout.

— **Water.** A new connection to the existing main line at Tyrella Street will be installed and a system of water mains extended throughout the southern portion of the NRP area. To provide a looped system, a second connection will be made by extending a main south of the airfield to the existing high pressure line at the southeast corner of the Ames Research

Center. A 3.2 mega-liter (850,000 gallon) storage tank will be installed in the NRP as an emergency water supply.

— **Reclaimed Water.** A new connection to the existing reclaimed water line at the southeast corner of the Ames Research Center will be installed and a system of reclaimed water mains extended throughout the southern portion of the NRP area.

— **Sanitary Sewer.** The collection system will drain to the north toward Shenandoah Plaza. A main will be installed in Wescoat Court to intercept the flow and direct it east toward the utility corridor that will run north along the western edge of the airfield. This line will terminate at the proposed sewer pump station located northeast of Hangar 1. The pump station will discharge into the existing gravity line that crosses the airfield, which will be converted to a force main by lining the existing pipe. The force main will discharge to the pump station located near the golf course, which discharges to the Sunnyvale system.

— **Storm Drainage.** The collection system will drain to the north toward Shenandoah Plaza. A main will be installed in Wescoat Court to intercept the flow and direct it east toward the utility corridor that will run north along the western edge of the airfield. Storm runoff will eventually discharge into a new settling basin adjacent to the existing settling basin north of Ames Campus. Both settling basins drain to the existing retention pond, from which storm water is evaporated, or can be pumped into Stevens Creek if required to maintain adequate storage capacity.

— **Electrical Service.** The feeder from the ARC substation to Switchgear C (Building 590 in NRP) will be upgraded to become the main source of power to that switchgear. The feeders from the Airfield substation to Switchgear C will provide backup power.

— **Natural Gas Service.** The existing connection adjacent to Highway 101 will be maintained. A new distribution system of natural gas piping will be installed.

## *B. Components in the Alternatives*

There are a number of new development projects included in some or all of the proposed alternatives. They are described here in detail, and the relevant descriptions are referenced in the discussion of each alternative that is included in Section C, below. Not all of these components are included in each alternative.

### 1. Land Uses and Facilities

The alternatives each include some or all of the following land uses and new facilities. Employment and population projection factors for each type of land use are shown in Table 2-3.

a. Educational Uses

A key component of proposed development at Ames Research Center is educational space to be shared by a number of different educational users. Based on the preliminary program submitted by one of these potential users, UC Santa Cruz, the program for this educational space would likely be approximately 42 percent office space, 50 percent high density classroom space, and 8 percent low density classroom space. NASA is currently planning with the following institutions:

- **UC Santa Cruz**. UC Santa Cruz has proposed a new regional education center to promote collaborative research with NASA/Ames personnel.
- **Carnegie-Mellon University**. Carnegie Mellon University would construct a West Coast campus that would focus on high dependability computing and collaboration with staff at Ames Research Center, other universities, and Silicon Valley companies.
- **San José State University.** This state university proposes on-site research and educational collaboration.
- **Foothill DeAnza College.** This regional community college plans to participate in the educational collaborative.

— **National Association for Equal Opportunity in Higher Education (NAFEO).** NAFEO is an association that advocates on behalf of historically Black colleges and universities, as well as Hispanic-serving institutions and Tribal colleges and universities. The organization's primary mission is "to articulate the need for a system of higher education where race, ethnicity, socio-economic status and previous educational attainment levels are not determinants of either the quantity or quality of higher education." Under the NASA Ames Development Plan, NAFEO is exploring the feasibility of establishing a Silicon Valley presence at Ames Research Center to expand educational and research opportunities for minority students and faculty from its member institutions, while working in partnership with ARC.

— **The National Center for Women in Science, Technology, Engineering and Mathematics.** The mission of this non-profit organization is "to increase the reach and effectiveness of organizations and individuals seeking to advance women and girls in science, technology, engineering and mathematics." This organization proposes to establish a national resource center in the NRP, and to create collaborative programs with NASA that would expand the representation of women in the technical and scientific workforce.

Employee projection factors for educational uses used in this EIS were derived from conversations with the University of California San Francisco (UCSF) Campus Planning Office and the UCSF Mission Bay Campus Environmental Impact Report (EIR). UCSF Mission Bay is a comparable project because its shared-use program resembles the NRP plan. The UCSF Campus Planning Office reports that the UCSF Mission Bay campus plan meets or exceeds the industry standard for employee densities in educational and research facilities, and is an improvement over current UCSF facilities.

TABLE 2-3: **POPULATION AND EMPLOYMENT PROJECTION FACTORS**

**POPULATION DENSITIES**

| **Land Use** | **Population Density** |
|---|---|
| Student Apartments & Dorms | 2 persons per unit |
| Townhomes & Apartments | 2.99 persons per unit (a) |
| Conference Guest Rooms | 1 bed per room; 1 person per bed |

**EMPLOYMENT PROJECTION FACTOR**

| **Land Use** | **Employment Projection Factor** (b) | **Data Source** |
|---|---|---|
| Office/HD R&D | 26 square meters (279 gross square feet) per employee | ITE code 750 |
| LD R&D/ Indust | 38 square meters (405 gross square feet) per employee | ITE code 760 |
| University | | |
| High Density Classroom | 17 square meters (188 gross square feet) per employee | Mission Bay EIR |
| Office | 26 square meters (279 gross square feet) per employee | ITE code 750 |
| Low Density Classroom (c) | 0 square meters (0 gross square feet) per employee | Mission Bay EIR |
| Public/ Museum (d) | 115 staff per million annual visitors | USAF Museum, Dayton, OH |
| Conf/ Training | 1 employee per room | Fort Baker EIS |
| Retail | | |
| Standard Retail | 46 square meters (500 gross square feet) per employee | ITE code 814 |
| Other Support Space (e) | 36 square meters (390 gross square feet) per employee | See footnote (e) |
| Recreation (f) | 58 square meters (625 gross square feet) per employee | See footnote (f) |
| Support (g) | 46 square meters (500 gross square feet) per employee | See footnote (g) |

Notes:

(a) 2015 Persons per Household in Santa Clara County, ABAG.

(b) The density factors account for both full-time and part-time workers.

(c) UCSF Campus Planning states that classrooms do not generate significant employees.

(d) The complex and unique nature of the proposed museum space prohibits the use of square footage to project employees. Instead, the USAF Museum in Dayton, OH was used as a proxy to project daily staff. The USAF museum has a similar program and a comparable number of annual visitors. NASA estimates 1 million annual visitors to the museum space, while the USAF Museum sees 1.2 million visitors a year.

(e) Includes a variety of uses including student meeting rooms and other community services. Employee Projection Factor is an average of Office/HD R&D and Standard Retail.

(f) Primarily includes health club facilities. Calls to comparable Bay Area health clubs were made to determine average employment density.

(g) Primarily includes child care space. Projection factor is function of legally mandated area per child (35 indoor sqft/child; another 15 sqft for non usable indoor space was added) and legally mandated staff to child ratio (average of 10 to 1).

Sources: Institute of Transportation Engineers, Trip Generation, 5th ed.; University of California, San Francisco; National Park Service, Fort Baker Final Environmental Impact Statement, 1999; Claritas, Inc.; USAF Museum; Association of Bay Area Governments, Projections 2000; National Child Care Information Center; Department of Social Services; Bay Area Economics, 2001.

— **National Association for Equal Opportunity in Higher Education (NAFEO).** NAFEO is an association that advocates on behalf of historically Black colleges and universities, as well as Hispanic-serving institutions and Tribal colleges and universities. The organization's primary mission is "to articulate the need for a system of higher education where race, ethnicity, socio-economic status and previous educational attainment levels are not determinants of either the quantity or quality of higher education." Under the NASA Ames Development Plan, NAFEO is exploring the feasibility of establishing a Silicon Valley presence at Ames Research Center to expand educational and research opportunities for minority students and faculty from its member institutions, while working in partnership with ARC.

— **The National Center for Women in Science, Technology, Engineering and Mathematics.** The mission of this non-profit organization is "to increase the reach and effectiveness of organizations and individuals seeking to advance women and girls in science, technology, engineering and mathematics." This organization proposes to establish a national resource center in the NRP, and to create collaborative programs with NASA that would expand the representation of women in the technical and scientific workforce.

Employee projection factors for educational uses used in this EIS were derived from conversations with the University of California San Francisco (UCSF) Campus Planning Office and the UCSF Mission Bay Campus Environmental Impact Report (EIR). UCSF Mission Bay is a comparable project because its shared-use program resembles the NRP plan. The UCSF Campus Planning Office reports that the UCSF Mission Bay campus plan meets or exceeds the industry standard for employee densities in educational and research facilities, and is an improvement over current UCSF facilities.

b. Museums

Two museums would be constructed on the site under several of the alternatives:

— **The Computer History Museum** would be an educational museum with exhibits on the development of computing. It is currently housed at a temporary facility within Ames Research Center, but would be moved to its own 7,400-square meter (80,000-square foot) building located in the NRP area. Its collection and archives are a resource for scholars, educators, engineers and journalists researching the history of computing. Exhibits cover both computing history and cutting edge developments from Silicon Valley and research at Ames Research Center itself. The new Computer History Museum facility would include exhibition, office and administration, library, and storage and archive space. Projected attendance is 50,000 people per year, with some additional visitorship linked to visitorship to the California Air and Space Center, which is described below.

— Historic Hangar 1 in the NRP area would be converted into the **California Air and Space Center** (CASC), an educational facility and museum on the history and future of the development of aerospace technology. This facility would include exhibit space; an IMAX Theater; facilities for meetings, conferences, and educational activities; office and administration uses; and visitor support space such as ticket booths, retail, etc. Projected attendance is approximately 1 million people per year.

  Due to the CASC's complex space requirements, the number of annual museum visitors, rather than square meters (square feet) per employee, is used to estimate employment. A ratio of annual visitors to daily staff was developed using data from the United States Air Force (USAF) Museum in Dayton, Ohio. The USAF Museum has a similar size and program as proposed for the CASC, and receives approximately 1.2 million visitors annually.

c. Office and High Density Research and Development Uses

Alternatives 2 through 5 include space for office and high density research and development uses to promote collaborative research between Ames Research Center and non-profit organizations, private companies, and educational institutions on topics related to NASA's Space Act mission. This development

would have approximately 3.6 employees per 93 square meters (1,000 square feet).[1]

d. Low-Density Research and Development and Light Industrial Uses

Another component of the alternatives is the renovation or development of space for low-density research and development and light industrial users. This use would occur in Hangars Two and Three in Alternatives 2, 3 and 4, and in other areas where appropriate.

This development would have approximately 2.5 employees per 93 square meters (1,000 square feet).[2]

e. Housing

For planning purposes, two types of housing are assumed in the alternatives. The first type includes 75-square meter (800-square foot) student apartments and dormitory units that are assumed to accommodate two people per unit. It is anticipated that these units will be used primarily by students associated with the NADP university partners and students working on the Ames Campus or Eastside/Airfield. The second type of housing includes 110-square meter (1,200-square foot) townhome and apartment units. These are assumed to accommodate 2.99 residents per unit, the projected number of residents per unit in Santa Clara County in 2015 according to ABAG. These units are intended to serve on-site employees. The intent of NADP housing is to provide housing for people who work or go to school on-site in order to alleviate the jobs/housing imbalance in the region and reduce rush hour traffic.

f. NRP Conference Center

This 180 - 250-room facility would provide temporary lodging and meeting space within the NRP area. It would be shared by NASA, the universities, and

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[1] Employee density data from Institute of Transportation Engineers (ITE) *Trip Generation*, 5th Edition.

[2] *Ibid.*

other tenants at Ames Research Center, and be available for other users as well. The number of rooms and the amount of space dedicated to meeting and presentation rooms varies under different alternatives. In addition to lodging and meeting rooms, the conference center could include other amenities such as restaurants and a gym.

For the Conference Center, the number of rooms is used to project employees, at a rate of one employee per room. This method corresponds with the employee projection method used by the National Parks Association in the Fort Baker Conference Center Final Environmental Impact Statement. This is a relatively conservative assumption. The UCSF Mission Bay EIR, for example, assumes a density of 0.74 employees per room in its employee forecasts for a hotel use.

g. Emergency Training Center

Alternatives 2 through 4 each include a regional disaster training facility in the Eastside/Airfield area. This 7,400-square meter (80,000-square foot) facility, called the Regional Disaster Training Facility, would include a number of training environments and a small amount of administrative space.

h. Control Tower

Under Alternatives 2 through 5, the existing control tower within the NRP area would be removed and a new 1,100 square meter (12,000 square foot) facility would be constructed in the Eastside/Airfield area.

i. Supporting Retail and Other Services

Each of the alternatives includes some space for Standard Retail businesses to serve people living and working on-site, such as cafes, copy shops, and dry cleaners. The alternatives also include space for needed community facilities, such as day care, banking, a health club and community centers.

Due to the diversity of potential uses under this category, the average employment projection factor of Office/High-Density R&D and Standard Retail from ITE's *Trip Generation* is used to estimate employment in most of

these uses. Comparable Bay Area health clubs were contacted to develop an appropriate employment projection factor for the health club. Two factors were used to determine the number of employees generated by the NRP child care facility: state laws setting minimum amounts of space per child as well as those regulating staff-to-child ratios. Licensed child care facilities are required to provide 3 square meters (35 square feet) indoor space per child. For the purposes of this analysis, an additional 1.5 square meters (15 square feet) of non-usable indoor space per child (e.g. hallways, bathrooms, administrative offices, maintenance and storage rooms) was added to the calculation. The minimum staff to child ratio at licensed child care centers varies according to the age of the children. An average of 10 children per staff member was used for this analysis.

**2. Other Program Components**

In addition to the uses and facilities listed above, some or all of the alternatives include the following programmatic components:

a. Sustainability

Sustainable development can be defined as development that meets the needs of the present without compromising the ability of future generations to meet their needs. NASA is committed to the notion that the NADP will be a model for sustainable development.

One of the cornerstones of sustainable development is conscientious management of potential traffic impacts, since traffic impacts lead to increased concentration of localized carbon monoxide and overall emissions of ozone precursors. In addition, increased idling time wastes precious fossil fuels. Alternatives 2 through 5 all include adherence to an aggressive TDM program as described in section h, below, and in Sections 3.3 and 4.3. Adherence to the TDM program is projected to decrease single-occupant vehicle trips by 22 per cent. Traffic impacts, such as decreased Levels of Service and increased idling time, would be lessened, reducing fossil fuel consumption and impacts to air quality.

The proposed project also includes on-site housing and pedestrian-oriented development, thereby reducing vehicle trips by locating jobs and housing in close proximity to one another and encouraging alternative modes of transportation such as walking or bicycling. Additionally, all of the major roadway segments within the NRP area would include Class II bicycle lanes and bicycle parking facilities including racks and/or lockers would be provided, as discussed in Sections 3.12 and 4.12.

The NADP encourages water conservation by requiring low flow fixtures, minimizing landscaping and maximizing the use of California native plants which are adapted to the Bay Area climate and hence require less water and maintenance than non-native species. In addition, the NADP includes use of reclaimed water which could serve the ARC for irrigation purposes. This is discussed further in Sections 3.5 and 4.5.

The Design Guide for the NADP outlines techniques for constructing energy-efficient buildings. The project buildings, as proposed, are 10 per cent more energy efficient than Title 24 standards. Title 24 is the state law requiring energy conservation. All buildings would, at a minimum, meet LEED certification standards, and obtain LEED certification.

The NADP includes preservation of habitat for the Burrowing Owl as part of all five of the alternatives. The inclusion of the Burrowing Owl Habitat Management Plan (BOHMP) means the preservation of 50-80 acres of land for burrowing owl nesting and foraging which would avoid most of the potential long-term impacts on burrowing owl nesting habitats as discussed in Sections 3.9 and 4.9.

The NASA Ames Research Center is committed to recycling and the reduction of solid and hazardous wastes, and has recycling and composting programs in place to reduce its wastes. These programs undergo continual improvements to increase on-site and off-site recycling opportunities and to reduce the quantity of wastes disposed.

b. Site Access Modifications

The development proposed under the NADP would result in changes to the internal roadway system. In some cases these changes would include new or realigned roadways designed to better serve the proposed land uses in the four planning areas. In other cases, changes would be required to meet security needs. While the exact nature of these changes will be a function of the final development plan, those expected to occur include relocation of the security fence to allow public access into the Bay View area while still providing security to the Ames Campus and Eastside/Airfield areas. Operations at Gate 17 east of R.T. Jones Road and the 5th Street (East) Gate are expected to remain unchanged in terms of operation and vehicle capacity.

c. Roadway Reconstruction

The proposed on-site roadway system for each alternative has been designed to accommodate both projected daily and peak hour traffic volumes. Within the NRP area, roads would be re-configured from one-way to two-way and widened and relocated in some cases to provide more direct travel routes. Certain segments providing connections to parking lots and structures would include limited driveway access and additional lanes to increase capacity. However, the overall roadway layout is designed to provide a clear hierarchy of roadways, minimize traffic volumes at key locations, encourage the use of other travel modes (public transit, bicycling, and walking), provide on-street parking where appropriate, and limit travel speeds through the developed portion of the NRP area. While the majority of the traffic generated by new land uses in the NRP area is expected to use Ellis Street interchange because of its proximity, some vehicles would use the Moffett Boulevard entrance. This activity is expected to result in increased traffic volumes on Clark Memorial Drive, Wescoat Court, McCord Avenue and North Akron Road. However, the project does not propose widening of any of these streets within the Shenandoah Plaza Historic District area.

In the Bay View and the Eastside/ Airfield areas, roads adjacent to new building construction are expected to be designed with standard lane widths and traffic control devices. The City of Mountain View may install a connecting

vehicular bridge at Charleston (see Section 4.3). New sidewalks would be installed as needed to provide adequate pedestrian connections within each area. On-street parking would be provided using the same design guidelines and standards that have been established for the NRP area.

No changes are anticipated to the road system in the Ames Campus area. The street system is expected to remain the same except at intersections with roadways in the NRP, where slight changes to traffic control may be required. None of these changes is expected to substantially affect operations.

d. Changes to Bicycle/Pedestrian Circulation

All of the major roadway segments within the NRP area, including Moffett Boulevard, Ellis Street, Cody Road and Manila Drive, and several minor roadway segments (Ellis Street Extension, McCord Avenue Extension) would include Class II bicycle lanes. Several off-street multi-use paths are also planned within the NRP area. Bicycle parking including racks and/or lockers would be provided throughout the NRP, Bay View, and East Airfield areas to encourage the use of bicycles.

Pedestrian circulation throughout Ames Research Center would be greatly enhanced, especially in the NRP area, by the provision of sidewalks on both sides of all new streets. A new sidewalk is also proposed for the south side of Wescoat Court. Numerous internal pedestrian connections would be provided within each parcel. In designing these facilities and working to improve bicycle access, NASA and its partners would consult with VTA and and local bicycle and pedestrian advisory commitees.

e. Infrastructure Improvements

Utility infrastructure that would be installed under each of the four action alternatives within the southern portion of the NRP area would tie into and extend the baseline infrastructure systems installed under baseline conditions. In general, all existing utility systems within the NRP south of Shenandoah Plaza would be replaced with new systems that follow the street layout. Utility systems within Shenandoah Plaza, the Eastside/Airfield are and the Bay

View (for Alternatives 2, 4 and 5 only) would be essentially independent of baseline infrastructure, although certain interconnections would be provided.

— **Water.** For Shenandoah Plaza, existing mains would be replaced as required to enable the system to operate at the same pressure as the rest of the NRP. For Eastside/Airfield area, a new connection to the existing high pressure system (designed to provide fire protection for Hangars 2 and 3) would be installed. Distribution systems would be installed for all areas.

  Under Alternatives 2, 4 and 5, a 3.0 mega-liter (800,000 gallon) storage tank would be installed in Bay View as an emergency water supply. A new connection to the existing high pressure water main would be installed near the main gate in the Bay View. A main would be extended north into the Bay View area, east toward the airfield, and then south in the proposed utility corridor that runs along the west edge of the airfield, to provide a second connection and a looped system in Bay View.

— **Reclaimed Water.** The reclaimed water system in Shenandoah Plaza would tie into and extend the system installed in the southern portion of the NRP. The Bay View system would also tie into the NRP via the utility corridor that runs along the west edge of the airfield. The golf course would be irrigated with reclaimed water under all alternatives, using a connection to the existing reclaimed water main in the Eastside/Airfield area. A second new connection to the existing main would be installed in Alternatives 2 and 4 to irrigate landscaping in the Eastside/Airfield area.

— **Sanitary Sewer.** For Shenandoah Plaza, existing mains would be replaced as required and the collection system would drain to the pump station located northeast of Hangar 1. The rest of NRP would also drain to this pump station, which discharges to the pump station located near the golf course. The collection system in the Eastside/Airfield area would continue to drain to the pump station located near the golf course, which discharges to the Sunnyvale system.

  Under Alternatives 2, 4 and 5, the Bay View system would drain to the existing gravity main that flows north through Ames Research Center and discharges to the Mountain View system.

— **Storm Drainage.** For Shenandoah Plaza, existing mains would be replaced as required and the collection system would drain to a main that would run north along the western edge of the airfield. Storm runoff from all of NRP would eventually discharge into one of two settling basins north of Ames Campus. The second settling basin is the terminus of the Ames Campus system. Both settling basins drain to the existing retention pond, from which storm water is evaporated, or can be pumped into Stevens Creek if required to maintain adequate storage capacity. The collection system in Eastside/Airfield area would continue to drain to the lift station located near the golf course, which discharges into the Northern Channel.

  The conceptual plan for the storm drain system to reduce off-site flows and pollutant loading has been revised in this Final Programmatic EIS. In Bay View, stormwater would be retained on-site in recreational areas, then flow through swales to a settling basin. From there, it would move on to the Eastern Diked Marsh and then to the sotrmwater retention pond, thereby eliminating the need to route water directly to Stevens Creek. In addition, there have been changes to the design of the NASA Research Park storm system to slow drainage flows to the stormwater retention pond.

— **Electrical Service.** The distribution system from Switchgear C (Building 590 in NRP) would be extended to serve all of NRP. New switchgears would be installed in Shenandoah Plaza and Bay View(under Alternatives 2, 4 and 5) to serve those areas. NRP and Bay View (under Alternatives 2, 4 and 5) would be fed from the ARC substation. Eastside/Airfield area would continue to be fed from the Airfield substation.

— **Natural Gas Service.** The distribution system in Shenandoah Plaza would be upgraded as required and tied in to the rest of NRP, which would be served from the existing connection adjacent to Highway 101. New connections and distribution systems would be installed in Bay View (under Alternatives 2, 4 and 5) and Eastside/Airfield.

f. Modifications to Outdoor Aerodynamic Research Facility Operations

Under Alternatives 2, 4 and 5, the Outdoor Aerodynamic Research Facility (OARF) in the Bay View area would remain in place with limitations on its use to minimize potential impacts on proposed housing and other facilities.

g. Fill in the Bay View Area

In order to allow for development of the Bay View area, the existing grade in the housing area would need to be raised by 0.2 to 1.4 meters (0.5 to 4.5 feet). This would require a total of approximately 123,000 cubic meters (160,000 cubic yards) of imported soil, which would be brought to the site by truck. Assuming double bottom dumper trucks with an average capacity of approximately 10 cubic meters (13 cubic yards), a total of approximately 12,300 truck trips would be needed. NASA or its partners would establish detailed construction traffic plans, including truck trips and haul routes, prior to large scale fill operations.

h. Transportation Demand Management Program

Under Alternatives 2 through 5, an aggressive TDM program would be implemented in the NRP and Bay View development areas in order to reduce single occupant vehicle trips generated by 22 percent. Additional trip reduction would be achieved through the provision of on-site housing. The TDM program would apply to all lessees, tenants, and partners located in buildings within the NRP and Bay View areas, as defined by the TDM Plan.

The TDM program , combined with the on-site housing, would be designed to produce a vehicle trip generation rate of 58 cars per 100 NRP/Bay View employees and students at project build-out. This compares to a vehicle trip generation rate of 86 cars per 100 employees among Santa Clara employees working at sites that do not provide TDM programs (source: Commute Profile 2000, RIDES for Bay Area Commuters). This is a net trip reduction of 32 percent (86 vs. 58). The walk, bike, shuttle trips attributed to the presence of on-site housing represent a 10 percent net trip reduction, while the walk, bike, shuttle, transit, carpool and vanpool trips attributed to the TDM program described below represent a 22 percent net trip reduction. The two factors

combined represent the overall 32 percent net trip reduction. Table 2-4 shows the effective percentage of TDM and housing reductions by alternative and time period.

A conceptual TDM program, designed to meet the above-quantified objectives, is detailed in Appendix B of this EIS. It includes the following key components:

- A paid parking program would be instituted throughout the NRP and Bay View area, such that all uses would be required to either pass parking charges along to their employees or offer parking cash-out programs.
- The internal shuttle program would be significantly expanded to meet the needs of the new development. Shuttle routes would provide service to the Ellis Street VTA station, and to Caltrain, meeting most trains throughout the day.
- A NRP Transportation Management Association (TMA) would be formed. All partners, lessees and tenants of the NRP and Bay View would be required to pay membership fees to support the NRP TMA. The TMA would implement and manage site-wide transportation demand management systems.
- Employees and students located in the NRP area would receive EcoPasses or another transit subsidy.
- The existing on-site bicycle network would be expanded.
- Through the shared parking program, the TMA would provide preferential parking for car pools. The TMA would also institute a guaranteed ride home program for people using public transit, car pools or van pools.
- An on-site car-share program would be provided to allow students to have access to cars on weekends and evenings, and to allow employees access to cars for business travel during the workday. The car-share vehicles would also be used by dedicated carpoolers for commute purposes and as Guaranteed Ride Home program vehicles.

- A combination of on-site amenities such as bank machines, post boxes, a concierge service, child care, a fitness center, recreation fields, and restaurants would be provided. This minimizes the need for mid-day trips among those who do choose to commute via automobile , and also increase the ability for people to use alternative modes to commute to the site, since a car is not necessarily needed mid-day.
- A fleet of on-site bicycles, including some electric bikes, would be provided to facilitate travel between the light rail station and the NRP, as well as throughout the NRP.
- A comprehensive marketing program would be provided.

As part of Alternatives 2 through 5, NASA and its partners would commit to implementing this or a similar TDM program that meets the quantified objectives presented at the beginning of this section h. Attainment of AVR goals at each phase of development would be required before development could proceed.

i. Burrowing Owl Habitat Management Plan

NASA has committed to include protection of burrowing owl habitat in all five development alternatives. NASA would place a Habitat Conservation Easement over the burrowing owl preserves. Dr. Lynne Trulio, a biologist who studies the burrowing owl population at Ames Research Center, prepared a Burrowing Owl Habitat Management Plan (BOHMP) that has been integrated into each of the alternatives. The full Plan is included in Appendix E, under separate cover. The following discussion summarizes its main points.

TABLE 2-4: **TDM AND HOUSING TRIP REDUCTIONS**

| Daily Trips | Westside | | Eastside/Airfield | |
|---|---|---|---|---|
| | TDM | Housing | TDM | Housing |
| Alternative 1 | 4.5% | N/A | N/A | N/A |
| Alternative 2 | 22.3% | 17.3% | 5.5% | 7.7% |
| Alternative 3 | 23.6% | 14.6% | 5.6% | 6.5% |
| Alternative 4 | 21.5% | 17.1% | 5.5% | 8.1% |
| Alternative 5 | 20.0% | 26.3% | N/A | N/A |
| Mitigated Alternative 5 | 16.5% | 39.0% | N/A | N/A |
| **AM Peak Hour** | | | | |
| Alternative 1 | 4.5% | N/A | N/A | N/A |
| Alternative 2 | 20.0% | 32.8% | 4.7% | 22.2% |
| Alternative 3 | 21.9% | 28.2% | 5.1% | 14.6% |
| Alternative 4 | 19.3% | 30.5% | 4.8% | 20.7% |
| Alternative 5 | 15.6% | 52.7% | N/A | N/A |
| Mitigated Alternative 5 | 8.4% | 80.9% | N/A | N/A |
| **PM Peak Hour** | | | | |
| Alternative 1 | 4.5% | N/A | N/A | N/A |
| Alternative 2 | 19.2% | 32.2% | 4.4% | 26.6% |
| Alternative 3 | 21.0% | 25.1% | 5.0% | 17.3% |
| Alternative 4 | 18.6% | 30.2% | 4.5% | 24.9% |
| Alternative 5 | 15.1% | 49.5% | N/A | N/A |
| Mitigated Alternative 5 | 8.5% | 75.7% | N/A | N/A |

Notes:
N/A = Not applicable because the indicated use would not be built.
Percentages represent the proportion compared to gross trip generation.
The variation in the net TDM reduction is caused by the fact that the housing reduction is taken first. The housing reduction varies because the amount and type of housing varies among alternatives. Next, a TDM reduction of 22 percent is applied to the net external trips (gross trips less the housing reduction). Thus, the higher the housing-related reduction, the lower the TDM percentage.
* See Section 5.3 for more information on Mitigated Alternative 5 reductions.
Source: Fehr and Peers Associates.

The BOHMP describes potential impacts from the proposed development alternatives, and lays out measures to avoid or mitigate them. The key provision of the BOHMP is the creation of burrowing owl preserves. The alternatives vary somewhat in the size of the preserves they set aside for burrowing owls. In the BOHMP, Dr. Trulio and NASA staff selected a 9-hectare (22-acre) area in NRP, a 3-hectare (8-acre) site in the Ames Campus area, a 10-hectare (24-acre) area in Eastside/Airfield, and an 11-hectare (27-acre) area in Bay View. The preserve within the Ames Campus area is smaller than the others because that planning area is mostly built out. Together, the four preserves set aside approximately 33 hectares (81 acres) for burrowing owl nesting and foraging. According to the BOHMP, NASA would avoid most of the potentially significant long-term impacts on burrowing owl nesting habitat by establishing these preserves and steering development away from them.[3]

However, even with the establishment of the preserves there could be some impacts on burrowing owls from implementation of the NADP. The BOHMP thus includes mitigation measures to address these impacts, which are described in more detail in Section 4.9 of this EIS. The mitigation measures are designed to address loss of burrows during construction, loss of habitat due to new development, disturbance of existing burrows, increased vehicle collisions, control of ground squirrels, decreased prey base, and increased predation. Taken together, the avoidance mitigation measures described in Section 4.9 are expected to achieve long-term protection of the existing burrowing owl colony at the Center given the proposed NASA Ames Development.

j. Stormwater Pollution Prevention Best Management Practices

Best Management Practices (BMPs) are techniques used in various land use activities to mitigate or prevent harm to or inhibition of natural attributes or processes. NASA Ames would incorporate several sets of BMPs into the buildout process for the NADP. Each is described in more detail below.

[3] *NASA ARC Burrowing Owl Habitat Management Plan*, p. 15.

i. BMPs for Construction, Demolition and Excavation Operations

The first set of BMPs are applicable to all construction, demolition and excavation activities at Ames Research Center that could potentially release pollutants to stormwater. Construction, demolition and excavation projects generate a great deal of dust, debris, waste materials and wastewaters that when improperly managed can result in prohibited discharges to the storm drainage system. At Ames, all contractor specifications require a Storm Water Pollution Prevention Plan. Furthermore, the California Storm Water Best Management Practice Handbook for Construction Activity is made available to construction contractors working at Ames.

Construction, demolition and excavation BMPs would include the following:

- Inlet protection for all inlets draining constructions areas.
- Silt fencing and/or fiber rolls to prevent sediment from leaving the site in storm runoff.
- Covering stockpiled material and directing storm runoff around stockpiles.
- Designated wash down areas to remove excess soil from equipment prior to leaving the site.
- Stabilized construction entrances.
- Regular sweeping of adjacent streets.
- A monitoring program to ensure that all BMPs are implemented.
- Each job site should be managed in such a manner to avoid discharges of prohibited substances to the storm drain system.
- Routine inspection of job site should be performed to ensure that construction, demolition and excavation materials (liquid or solid) are not entering the storm drain system.
- Cleaning equipment or tools over catch basins is prohibited.
- Keep the job site tidy and clean up debris regularly.

- Storm drain catch basins should be covered to prevent pollutants and sediments from entering the storm drain system.
- Special precautions should be employed if rain is forecast or if water is applied. These precautions should include, but are not limited to:
  - Increased monitoring frequency for storm drains and to rectify ongoing releases or to identify and prevent any possible release; and
  - Reduction in activities that can cause material to come into contact with rain water
- Following all construction, demolition and excavation activities; the job site should be swept to remove debris and residue. Catch basins should be vacuumed to remove sediment and debris.

ii. BMPs for Erosion Control, Site Stabilization and Stormwater Management
NASA Ames has also committed to a series of BMPs that address erosion control, site stabilization and stormwater management. These BMPs are applicable to all building, construction and landscaping activities at Ames Research Center including the planting and maintenance of vegetation, the diversion of run-on and runoff, and the placement of sandbags, silt screens or other sediment control devices.

Soil erosion prevention is not required in many areas of Ames because the vegetation primarily consists of marshlands and grasslands. However, erosion prevention measures are considered during any construction and /or grounds maintenance activities. The BMPs that apply under this category include the following:

- Identify areas which, due to topography, activities or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and / or stabilization measures used to limit erosion.
- Retain as much vegetation (plants) onsite as possible.
- Minimize the time that soil is exposed. Water exposed areas to control dust.

- Prevent runoff from flowing across disturbed areas (divert the flow to vegetated areas).
- Stabilize the disturbed soils as soon as possible by planting vegetation or hydroseeding.
- Slow down the run-off flowing across site (regrading, silt fences, planting).
- Provide drainage ways for the increased run-off (use grassy swales rather than concrete drains).
- Remove sediment from storm water run-off before it leaves the site.
- For large piles of soil where tarps or other covers are not feasible, place filtering media (e.g. straw bales, rocks, silt fences, etc.) around the base of each pile or at the storm drain inlet to remove these materials from rainwater run-off.

iii. BMPs to Achieve No Net Increase in Peak Discharge to the Storm Water Retention Pond

NASA would also incorporate BMPs that would achieve no net increase in peak discharge to the Storm Water Retention Pond (SWRP). These BMPs are as follows:

- Determine the conceptual design of the structural, in line modifications/detention (for NASA Research Park), and athletic field/detention pond and grass lined swale in buffer zone (for Bay View) required to achieve no net increase in peak discharge to the SWRP.
- Investigate the use of decentralized detention elements such as green roofs, grass lined swales for roof water runoff, and possibly permeable pavements to aid in achieving no net increase in peak discharge to the SWRP.

iv. BMPs to Reduce Pollutant Loading in Stormwater Runoff

NASA would incorporate the following BMPs into the Design Guidelines for the development proposed under the NADP to reduce pollutant loading in the stormwater runoff:

- Enclosed community car wash areas that drain to the sanitary sewer system.
- Enclosed and covered community dumpsters.
- A regular street sweeping program of parking lots and streets.
- Direct runoff from roof downspouts into landscaped areas.
- Direct runoff from parking lots through grassy swales in landscaped areas before entering drainage system.
- Labeled Storm Drain inlets saying "No dumping! Flows to Wetland Habitat!" or other appropriate wording to be determined.
- Use of warm season grasses and drought tolerant vegetation.
- Installation of efficient irrigation systems in landscaped areas to minimize runoff, such as bubblers instead of sprinklers.

## *C. The Alternatives*

This section describes the project alternatives in terms of land use and job generation, open space provision, and security and circulation. Figures 2-2 through 2-5 and Tables 2-5 through 2-12 show the development that would occur under Alternatives 2 through 5, which are the alternatives that include new development. Table 2-13 shows employment and population forecasts for Alternatives 2 through 5.

### 1. Alternative 1: The No Project Alternative

Under the National Environmental Protection Act (NEPA) (42 U.S.C. 4321 *et seq.*), every EIS is required to include an option in which the proposed project does not take place and the status quo is maintained. This No Project alternative serves as a base case from which the impacts of all of the other alternatives are measured. Section A, above, describes the baseline conditions

at Ames Research Center if no new development were proposed.[4] Under this baseline, the NRP area would have buildings totaling approximately 186,000 square meters (2 million square feet), the Eastside/Airfield (including CANG) would have a total of approximately 106,000 square meters (1.1 million square feet), the Ames Campus area would have a total of approximately 270,000 square meters (2.9 million square feet) and there would be no development in the Bay View area. The baseline level of development for the entire Ames Research Center would thus be approximately 561,000 square meters (6 million square feet), including development under the CANG EA.

a. Land Use and Job Generation

Under the No Project Alternative, there would be no additional uses beyond those included in the baseline. There would be no new housing units constructed, and the airfield would continue to be restricted to government use, with no cargo, general aviation, or commercial uses allowed. Employment levels would remain below the threshold of 10,610 jobs set in the CUP EA.

b. Open Space

Under the No Project Alternative, there would be no changes to open space at Ames Research Center beyond the baseline described above in Section A.

c. Security and Circulation

As described above in Section A, the security fence would be moved to the outer edges of the NRP area under baseline conditions. The Ellis Street gate area would be reconfigured to make it the primary entrance to the NRP area. In addition, a new roadway would be constructed to link the new development

[4] As described in the Executive Summary, the name for this alternative under NEPA is typically the "No Action" alternative. However, given that this alternative would include some action as projects cleared earlier were implemented, and that "No Project" is the CEQA equivalent of "No Action" and thus very familiar to the public reading the document, ARC has determined that "No Project" is the more appropriate name for this alternative.

under the CUP EA to the Ellis Street entrance. No other circulation or security changes would occur under Alternative 1.

Under the No Project Alternative, the current TDM program at Ames Research Center would be maintained. An additional TDM program would be implemented for the CUP EA projects. No other TDM measures would be instituted.

**2. Alternative 2**

Alternative 2 calls for a total of approximately 363,000 square meters (3.9 million square feet) of new development. Approximately 165,000 square meters (1.8 million square feet) of existing space would be renovated, including all three of the historic hangars, and roughly 52,000 square meters (560,000 square feet) of existing space in non-historic buildings would be demolished. Total build out within Ames Research Center would be approximately 845,000 square meters (9.1 million square feet), an increase in density of approximately 67 percent. Table 2-5 summarizes and Figure 2-2 shows the land use plan for Alternative 2.

Within the Shenandoah Plaza Historic District, all historic buildings would be preserved. Most of the non-historic buildings would be removed. A strip of cleared land running parallel to Hangar One would be converted back to open space as it was in the original site plan for the Moffett Field. Other cleared areas would be developed with infill buildings carefully designed to be harmonious with the colors, materials, and scale of the historic structures. Outside the Shenandoah Plaza Historic District, new buildings within the NRP and Bay View areas would be three to four stories high. They would be located along street frontages, with structured parking behind them, shielded from view.

a. Land Use and Job Generation

Under Alternative 2, new construction at Ames Research Center would be located in the NRP, Bay View and Eastside/Airfield areas.

— **NRP.** There would be approximately 186,000 square meters (2 million square feet) of new office, research and development, classroom, museum, conference center and housing constructed in the NRP area. Approximately 52,000 square meters (560,000 square feet) of existing space would be demolished, and approximately 46,000 square meters (500,000 square feet) would be renovated.

— **Bay View.** Approximately 121,000 square meters (1.3 million square feet) of new office, research and development, university-related space and housing would be constructed in the Bay View area.

— **Eastside/Airfield.** Alternative 2 proposes the construction of approximately 51,000 square meters (550,000 square feet) of new office, research and development, and fire training space in the Eastside/Airfield area. Approximately 72,000 square meters (780,000 square feet) of space in historic Hangars Two and Three would be converted to low-density research and development and light industrial space. Table 2-6 lists the new uses included in Alternative 2, which are described above in Section B.

As shown in Table 2-13, Alternative 2 is projected to generate approximately 13,068 new workers at ARC. A total of 2,010 residents would live on-site. Approximately 1,634 of these would live in townhomes and apartment units, and 376 would live in student apartments and dormitory units.

b. Open Space

Under Alternative 2, one hole of the golf course on the east side of Macon Road would be relocated. The 1.8-hectare (4.5-acre) central green of Shenandoah Plaza would be preserved. A new linear greenway parallel to Hangar One would be created, restoring the original site plan for Moffett Field, and there would also be a number of new linear open spaces and plazas in the NRP area. Approximately 20.4 hectares (50.55 acres) of the current open grassland in Bay View would be developed under Alternative 2, including 4.6 hectares (11.4 acres) of new active recreation areas. Finally, burrowing owl preserves of 9, 3, 11 and 10 hectares (22, 8, 27, and 24 acres) would be set aside

in the NRP, the Ames Campus, the Bay View and Eastside/Airfield areas respectively, as described in the BOHMP.

c. Security and Circulation

As described above in Section A, under baseline conditions the security fence would be moved to the outer edges of the NRP area and a new gate constructed on Macon Road to provide secured access to the Eastside/Airfield area. Under Alternative 2, the new security fence would be repositioned to the outer edges of the Ames Campus area in order to allow public access to the Bay View area. The fence would also be relocated in the vicinity of the burrowing owl habitat near the airfield at the southern end of the NRP.

Under Alternative 2, the historic roadway network within the Shenandoah Plaza Historic District would be preserved. The street grid in the rest of the NRP area would be reconfigured to serve the new development parcels, creating a grid pattern that would run parallel to the east/west axis of Shenandoah Plaza, and then shift approximately 45E to parallel Highway 101. The Ellis Street gate area would be reconfigured to make it the primary entrance to the NRP area. The existing grid within the Bay View area would be expanded to serve the new development parcels.

No new roadways would be required in the Eastside/Airfield or Ames Campus areas.

Parking would be distributed throughout Ames Research Center in parking structures and surface lots based upon need. During peak parking demand events, such as major events at Hangar One, large portions of the paved airfield areas would be used as spillover parking. Parking structures in proximity to Hangar 1 and the other visitor attractions would be designed to allow shared use between these facilities and adjacent office building users.

## Table 2-5: Alternative 2 Land Use Summary

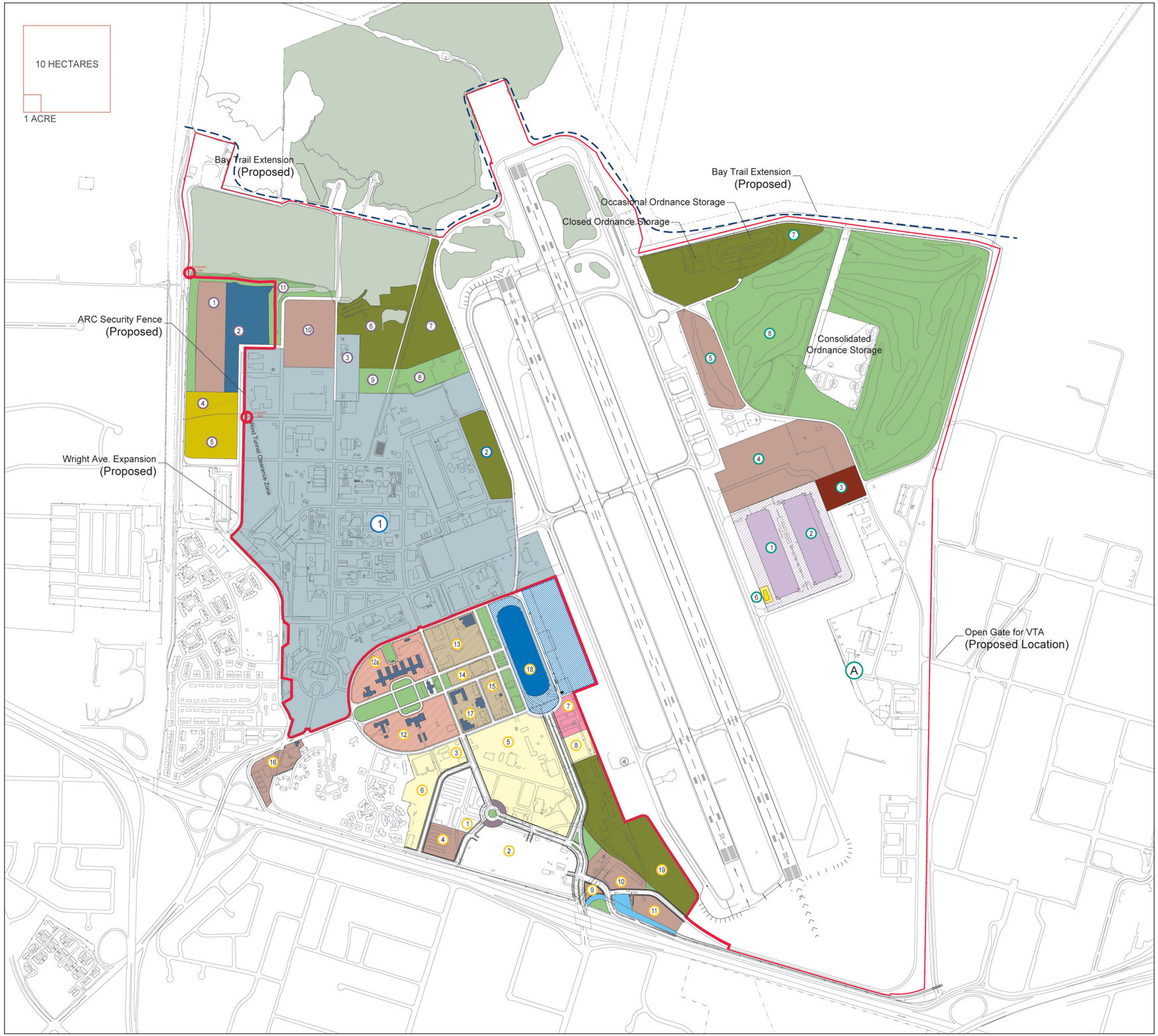
| Parcel | | Land Use | | Parcel Area (HECT) | Parcel Area (AC) | FAR | Developable Area (MS) | Developable Area (SF) |
|---|---|---|---|---|---|---|---|---|
| Ames Campus | 1 | ARC Facilities | | 91.60 | *226.35* | 0.29 | 268,458 | *2,889,658* |
| | 2 | Preserve | | 3.15 | *7.78* | N/A | N/A | *N/A* |
| | | **Sub Total** | | **94.8** | *234.1* | | **268,458** | *2,889,658* |
| NASA Research Park | 1 | Lab Project | * | 3.36 | *8.31* | 0.33 | 11,148 | *120,000* |
| | 2 | Lab Project | * | 7.90 | *19.53* | 0.71 | 55,742 | *600,000* |
| | 3 | University Reserve | | 1.03 | *2.53* | 0.59 | 6,039 | *65,000* |
| | 4 | Partner Parcel | | 1.50 | *3.70* | 0.53 | 7,897 | *85,000* |
| | 5 | University Reserve | | 11.58 | *28.60* | 0.66 | 76,180 | *820,000* |
| | 6 | University Reserve | | 2.88 | *7.11* | 1.16 | 33,445 | *360,000* |
| | 7 | Computer Museum | | 1.26 | *3.11* | 0.52 | 6,503 | *70,000* |
| | 8 | University Reserve | | 1.02 | *2.52* | 0.64 | 6,503 | *70,000* |
| | 9 | Gateway Parcel | | 0.26 | *0.65* | 0.42 | 1,116 | *12,010* |
| | 10 | Partner Parcel | | 1.90 | *4.70* | 0.68 | 13,006 | *140,000* |
| | 11 | Partner Parcel | | 1.36 | *3.35* | 0.75 | 10,219 | *110,000* |
| | 12 | Historic District | * | 7.91 | *19.55* | N/A | 8,268 | *89,000* |
| | 12a | Historic District | | | | | 1,486 | *16,000* |
| | 13 | Historic District Infill | | 2.31 | *5.70* | 0.40 | 9,290 | *100,000* |
| | 14 | Historic District Infill | | 1.72 | *4.26* | 0.67 | 11,613 | *125,000* |
| | 15 | Historic District Infill | | 1.06 | *2.62* | 0.66 | 6,968 | *75,000* |
| | 16 | Partner Parcel | | 1.85 | *4.56* | 0.70 | 13,006 | *140,000* |
| | 17 | Historic Dist Reno | | 1.72 | *4.26* | N/A | 4,181 | *45,000* |
| | 18 | C.Air & Space Cntr. | | 5.70 | *14.09* | 0.64 | 36,232 | *390,000* |
| | 19 | Preserve | | 8.83 | *21.82* | N/A | N/A | *N/A* |
| | X | No Change | | N/A | *N/A* | N/A | 6,316 | *67,990* |
| | | **Sub Total** | | **65.1** | *161.0* | | **325,161** | *3,500,000* |
| Eastside / Airfield | 1 | Adaptive Re-Use Hangar 2 (46) | | 6.17 | *15.24* | 0.52 | 32,226 | *346,875* |
| | 2 | Adaptive Re-Use Hangar 3 (47) | | 6.48 | *16.02* | 0.62 | 40,296 | *433,738* |
| | 3 | Training/Conf. Cntr. | | 1.86 | *4.60* | 0.40 | 7,432 | *80,000* |
| | 4 | Partner Parcel | | 10.46 | *25.84* | 0.32 | 33,445 | *360,000* |
| | 5 | Partner Parcel | | 3.99 | *9.86* | 0.23 | 9,104 | *98,000* |
| | 6 | A/C Control Tower | | 0.19 | *0.46* | 0.60 | 1,115 | *12,000* |
| | 7 | Preserve | | 9.82 | *24.26* | N/A | N/A | *N/A* |
| | 8 | Open Space | | 61.28 | *151.43* | N/A | N/A | *N/A* |
| | X | No Change | | N/A | *N/A* | N/A | 7,341 | *79,023* |
| | | **Sub Total** | | **100.2** | *247.7* | | **130,959** | *1,409,636* |
| | A | CANG Master Plan (EA) | ** | | | | | |
| Bay View | 1 | Partner Housing | | 4.17 | *10.30* | 0.67 | 27,871 | *300,000* |
| | 2 | Education Reserve | | 5.11 | *12.62* | 0.91 | 46,452 | *500,000* |
| | 3 | NASA Reserve | | 2.04 | *5.03* | N/A | N/A | *N/A* |
| | 4 | Recreation | | 1.63 | *4.02* | N/A | N/A | *N/A* |
| | 5 | Recreation | | 2.98 | *7.37* | N/A | N/A | *N/A* |
| | 6 | Preserve | | 6.31 | *15.60* | N/A | N/A | *N/A* |
| | 7 | Preserve | | 4.81 | *11.89* | N/A | N/A | *N/A* |
| | 8 | Open Space | | 2.57 | *6.35* | N/A | N/A | *N/A* |
| | 9 | Open Space | | 1.02 | *2.52* | N/A | N/A | *N/A* |
| | 10 | Partner Parcel | | 4.52 | *11.17* | 1.03 | 46,452 | *500,000* |
| | 11 | Open Space | | 3.03 | *7.49* | N/A | N/A | *N/A* |
| | | **Sub Total** | | **38.2** | *94.4* | | **120,774** | *1,300,000* |
| Total | | | | | | | **845,352** | *9,099,294* |
| | A | CANG Master Plan(EA) | ** | 44.52 | *110.00* | N/A | 6,020 | *64,800* |
| | | Existing CANG Facilities | | N/A | N/A | N/A | 20,717 | *223,000* |

* *"Preapproved pursuant to the 1994 NASA/MFA Environmental Assessment - Comprehensive Use Plan"*

** *"Preapproved pursuant to the CANG EA Master Plan - Square footage not included in totals*

FIGURE 2.2

# PROPOSED LAND USE PLAN
# ALTERNATIVE TWO




LEGEND:

- Partner Parcel
- Community Support
- University Reserve
- NASA Reserved
- Recreation
- Adaptive Reuse (Hangars)
- Relocated AT Control Tower
- Training/Conference Center
- California Air and Space Center
- Historic District Infill
- Historic District Renovation
- Historic Buildings
- Computer Museum
- Supporting Retail
- Light Rail
- Preserve (Burrowing Owl)
- Open Space
- Wetlands
- Fence Line
- Bay Trail Extension

*Denotes Parcel Number as Noted on Table 2-5*

- (1) Ames Campus
- (1) NASA Research Park
- (1) Eastside / Airfield
- (1) Bay View

DMJMH+N EDAW

N

0 76m 152m 305m
0 250ft 500ft 1000ft

**NASA AMES RESEARCH CENTER**
NASA AMES DEVELOPMENT PLAN FINAL EIS

TABLE 2-6: **NEW USES UNDER ALTERNATIVE 2**

| Location | Use | Square Meters | Square Feet |
|---|---|---|---|
| **NRP Area:** | Educational Uses | 78,036 | 840,000 |
| | Computer History Museum | 6,503 | 70,000 |
| | CASC | 36,231 | 390,000 |
| | Conference Center | 18,580 | 200,000 |
| | Housing: | | |
| | 188 800 sf units | 13,935 | 150,000 |
| | 300 1,200 sf units | 33,444 | 360,000 |
| | Office/High Density R&D | 46,637 | 502,010 |
| | Retail and Support Services | 4,645 | 50,000 |
| | **Total New Uses in NRP Area:** | **238,010** | **2,562,010** |
| | | | |
| **Ames Campus Area:** | No new uses under this alternative | | |
| | **Total New Uses in Ames Campus Area** | - | - |
| | | | |
| **Eastside/Airfield Area:** | Office/High Density R&D | 33,444 | 360,000 |
| | Low Density R&D/Light Industrial: | | |
| | Renovation of Hangars 2 and 3 | 72,520 | 780,613 |
| | Other | 10,219 | 110,000 |
| | Emergency Training Center | 7,432 | 80,000 |
| | **Total New Uses in Eastside/ Airfield Area:** | **123,615** | **1,330,613** |
| | | | |
| **Bay View Area:** | Educational, Child Care and Support Uses | 46,450 | 500,000 |
| | Housing: 250 1,200 sf units | 27,870 | 300,000 |
| | Office/High Density R&D | 46,450 | 500,000 |
| | **Total New Uses in Bay View Area:** | **120,770** | **1,300,000** |
| | | | |
| | **Total New Uses Under Alternative 2:** | **482,395** | **5,192,623** |

The new TDM program described above in Section B would be implemented in the Bay View and NRP areas. In addition, the provision of on-site housing for employees and students under Alternative 2 would substantially reduce the number of vehicle trips that would normally be generated by the proposed new uses within Ames Research Center. Proposed housing would reduce the gross number of daily trips by approximately 13 percent, and the gross number of peak hour trips by approximately 31 percent. More detailed discussion of project trip generation can be found in Section 4.3.

**3. Alternative 3**

Alternative 3 calls for a total of approximately 280,000 square meters (3 million square feet) of new development. Approximately 165,000 square meters (1.8 million square feet) of existing space would be renovated, including all three of the historic hangars. Roughly 52,000 square meters (560,000 square feet) of existing space in non-historic buildings would be demolished. Total build out within Ames Research Center would be approximately 766,000 square meters (8.2 million square feet), an increase in density of approximately 52 percent. Table 2-7 summarizes and Figure 2-3 shows the land use plan for Alternative 3.

Alternative 3 is based on the 1998 Arcadia Vision Plan, which was developed by private consultants working in conjunction with NASA to create a "neo-traditional" mixed-use residential and office development at Ames Research Center. All new construction proposed under Alternative 3 would be clustered in the NRP area; in addition, the historic hangars in the Eastside/Airfield area would be renovated for reuse. Alternative 3 does not propose any new construction in the Bay View, Eastside/Airfield, or Ames Campus areas.

Under Alternative 3, the new development within the NRP area would primarily take the form of two- to three-story buildings running along the perimeter of each block and enclosing landscaped interior courtyards. These buildings would use the

Spanish Colonial Revival design and site layout of the existing historic buildings as a precedent, unifying the historic and non-historic parts of the NRP area.

a. Land Use Plan and Job Generation

Under Alternative 3, new construction at Ames Research Center would be located only in the NRP area, with some renovation in the Eastside/Airfield area.

- **NRP.** Under Alternative 3, approximately 280,000 square meters (3 million square feet) of new office, research and development, university-related, museum, conference center, and housing uses would be constructed in the NRP area. Approximately 46,000 square meters (500,000 square feet) of existing buildings, including Hangar One, would be renovated, and another 52,000 square meters (560,000 square feet) of existing buildings would be demolished. The total build out in the NRP area would be approximately 420,000 square meters (4.5 million square feet). Uses would be mixed vertically in new buildings, with research, education, and service facilities on lower floors and housing above.
- **Eastside/Airfield.** Alternative 3 proposed the renovation of Hangars 2 and 3 in the Eastside/Airfield area to house new light industrial or low-density research and development uses. No new buildings would be constructed.

Table 2-8 lists the new uses included in Alternative 3, which are described above in Section B.

As shown in Table 2-13, Alternative 3 is projected to generate approximately 11,047 new workers at ARC. A total of 1,267 residents would live on-site. Approximately 891 of these would live in townhome and apartment units, and 376 would live in student apartments and dormitory units.

## Table 2-7: Alternative 3 Land Use Summary

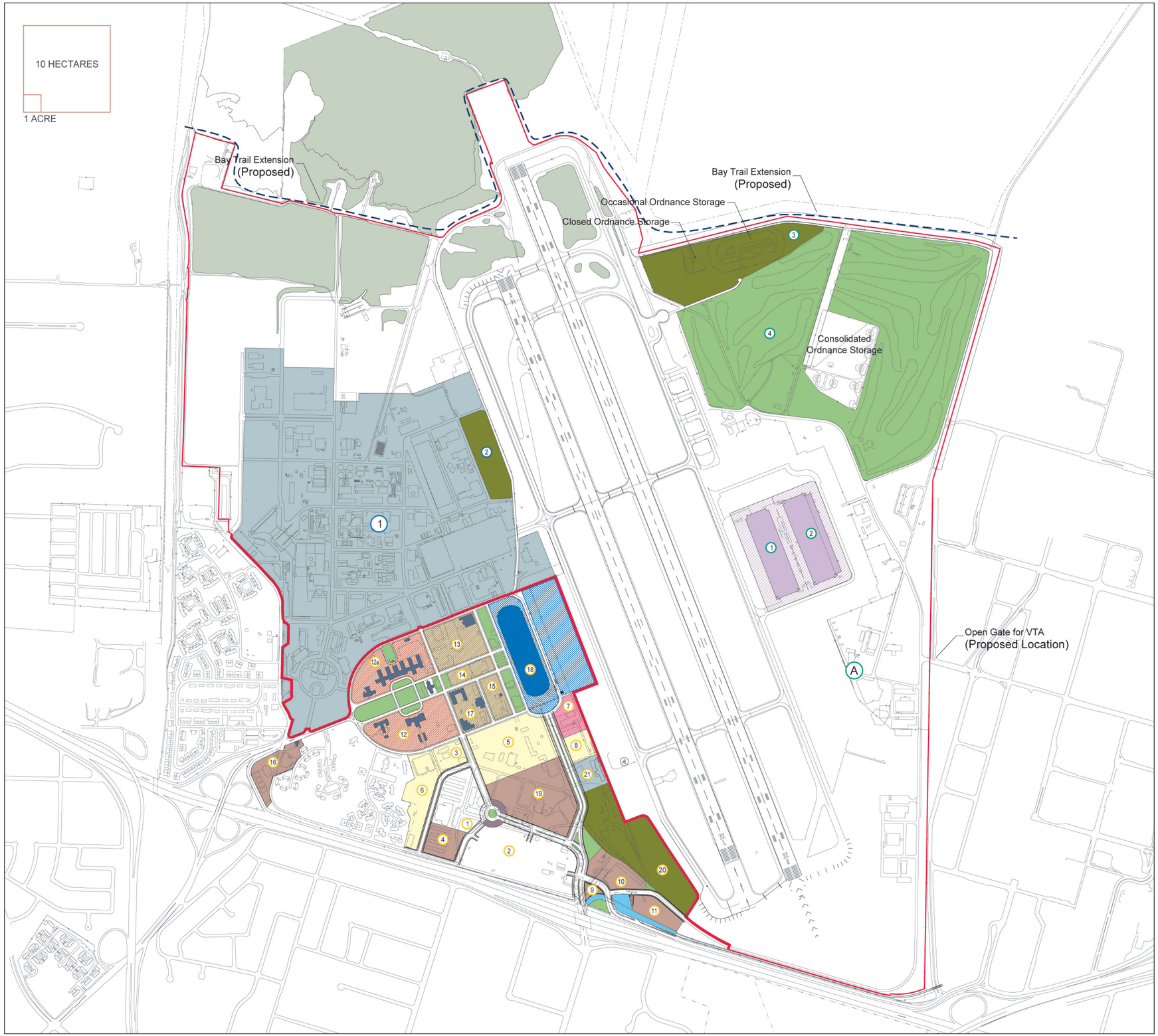
| Parcel | | Land Use | | Parcel Area (HECT) | Parcel Area (AC) | FAR | Developable Area (MS) | Developable Area (SF) |
|---|---|---|---|---|---|---|---|---|
| Ames Campus | 1 | ARC Facilities | | 91.60 | *226.35* | 0.29 | 268,458 | *2,889,658* |
| | 2 | Preserve | | 3.15 | *7.78* | N/A | N/A | *N/A* |
| | | **Sub Total** | | **94.8** | *234.1* | | **268,458** | *2,889,658* |
| NASA Research Park | 1 | Lab Project | * | 3.36 | *8.31* | 0.33 | 11,148 | *120,000* |
| | 2 | Lab Project | * | 7.90 | *19.53* | 0.71 | 55,742 | *600,000* |
| | 3 | University Reserve | | 1.03 | *2.53* | 0.59 | 6,039 | *65,000* |
| | 4 | Partner Parcel | | 1.50 | *3.70* | 0.53 | 7,897 | *85,000* |
| | 5 | University Reserve | | 5.89 | *14.56* | 1.32 | 78,039 | *840,000* |
| | 6 | University Reserve | | 2.88 | *7.11* | 1.16 | 33,445 | *360,000* |
| | 7 | Computer Museum | | 1.26 | *3.11* | 0.52 | 6,503 | *70,000* |
| | 8 | University Reserve | | 1.02 | *2.52* | 0.68 | 6,968 | *75,000* |
| | 9 | Gateway Parcel | | 0.26 | *0.65* | 0.42 | 1,116 | *12,010* |
| | 10 | Partner Parcel | | 1.90 | *4.70* | 0.98 | 18,581 | *200,000* |
| | 11 | Partner Parcel | | 1.36 | *3.35* | 1.03 | 13,935 | *150,000* |
| | 12 | Historic District | * | 7.91 | *19.55* | N/A | 8,268 | *89,000* |
| | 12a | Historic District | | | | | 1,486 | *16,000* |
| | 13 | Historic District Infill | | 2.31 | *5.70* | N/A | 10,684 | *115,000* |
| | 14 | Historic District Infill | | 1.72 | *4.26* | 0.86 | 14,864 | *160,000* |
| | 15 | Historic District Infill | | 1.06 | *2.62* | 0.79 | 8,361 | *90,000* |
| | 16 | Partner Parcel | | 1.85 | *4.56* | 1.01 | 18,581 | *200,000* |
| | 17 | Historic Dist Reno | | 1.72 | *4.26* | 0.24 | 4,181 | *45,000* |
| | 18 | C.Air & Space Cntr. | | 5.70 | *14.09* | N/A | 36,232 | *390,000* |
| | 19 | Partner Parcel | | 5.68 | *14.05* | 1.23 | 69,677 | *750,000* |
| | 20 | Preserve | | 7.66 | *18.94* | N/A | N/A | *N/A* |
| | 21 | NASA Reserved | | 1.16 | *2.87* | N/A | N/A | *N/A* |
| | X | No Change | | N/A | *N/A* | N/A | 6,316 | *67,990* |
| | | **Sub Total** | | **65.1** | *161.0* | | **418,064** | *4,500,000* |
| Eastside / Airfield | 1 | Adaptive Re-Use Hangar 2 (46) | | 6.35 | *15.69* | 0.51 | 32,226 | *346,875* |
| | 2 | Adaptive Re-Use Hangar 3 (47) | | 6.48 | *16.02* | 0.62 | 40,296 | *433,738* |
| | 3 | Preserve | | 9.82 | *24.26* | N/A | N/A | *N/A* |
| | 4 | Open Space | | 59.53 | *147.11* | N/A | N/A | *N/A* |
| | X | No Change | | N/A | *N/A* | N/A | 7,341 | *79,023* |
| | | **Sub Total** | | **82.2** | *203.1* | | **79,863** | *859,636* |
| | A | CANG Master Plan (EA) | ** | | | | | |
| Total | | | | | | | **766,385** | *8,249,294* |
| | A | CANG Master Plan(EA) | ** | 44.52 | *110.00* | N/A | 6,020 | *64,800* |
| | | Existing CANG Facilities | | N/A | N/A | N/A | 20,717 | *223,000* |

* *"Preapproved pursuant to the 1994 NASA/MFA Environmental Assessment - Comprehensive Use Plan"*

** *"Preapproved pursuant to the CANG EA Master Plan - Square footage not included in totals*

FIGURE 2.3

# PROPOSED LAND USE PLAN
# ALTERNATIVE THREE




LEGEND:

- Partner Parcel
- University Reserve
- NASA Reserved
- Adaptive Reuse (Hangars)
- California Air and Space Center
- Historic District Infill
- Historic District Renovation
- Historic Buildings
- Computer Museum
- Supporting Retail
- Light Rail
- Preserve (Burrowing Owl)
- Open Space
- Wetlands
- Fence Line
- Bay Trail Extension

*Denotes Parcel Number as Noted on Table 2-7*

- Ames Campus
- NASA Research Park
- Eastside / Airfield

DMJMH+N EDAW

0 76m 152m 305m
0 250ft 500ft 1000ft

**NASA AMES RESEARCH CENTER**
NASA AMES DEVELOPMENT PLAN FINAL EIS

TABLE 2-8: **NEW USES UNDER ALTERNATIVE 3**

| Location | Use | Square Meters | Square Feet |
|---|---|---|---|
| **NRP Area:** | Educational Uses | 78,036 | 840,000 |
| | Computer History Museum | 6,503 | 70,000 |
| | CASC | 36,231 | 390,000 |
| | Conference Center | 23,225 | 250,000 |
| | Housing: | | |
| | 188 800 sf units | 13,935 | 150,000 |
| | 300 1,200 sf units | 33,444 | 360,000 |
| | Office/High Density R&D | 132,569 | 1,427,010 |
| | Retail and Support Services | 6,968 | 75,000 |
| | **Total New Uses in NRP Area:** | **330,911** | **3,562,010** |
| **Ames Campus Area:** | No new uses under this alternative | | |
| | **Total New Uses in Ames Campus Area:** | **-** | **-** |
| **Eastside/Airfield Area:** | Low Density R&D/Light Industrial: | | |
| | Renovation of Hangars 2 and 3 | 72,520 | 780,613 |
| | **Total New Uses in Eastside/ Airfield Area:** | **72,520** | **780,613** |
| **Bay View Area:** | No new uses under this alternative | | |
| | **Total New Uses in Bay View Area:** | **-** | **-** |
| | Total New Uses Under Alternative 3: | **403,431** | **4,342,623** |

b. Open Space

As in Alternative 2, the central green in Shenandoah Plaza would be preserved, and a new linear greenspace adjacent to Hangar 1 would be created. In addition, the new buildings within the NRP area would enclose a substantial amount of new green space in interior landscaped courtyards. The large tract of undeveloped land adjacent to the new light rail station would be redeveloped, but none of the existing open space in the Bay View, Eastside/Airfield, or Ames Campus areas would be removed. Finally, a burrowing owl preserve would be set aside in the NRP as described in the BOHMP.

c. Security and Circulation

As described above in Section A, under baseline conditions the security fence would be moved to the outer edges of the NRP area and a new gate constructed on Macon Road to provide secured access to the Eastside/Airfield area. Under Alternative 3, the fence would also be relocated in the vicinity of the burrowing owl habitat near the airfield at the southern end of the NRP.

Under Alternative 3, the historic road network within the Shenandoah Plaza Historic District would remain, but the rest of the NRP area would require new roadway infrastructure. As in Alternative 2, the new road network would consist of a modified grid that pivoted to follow the orientation of Highway 101 to the southwest, and the airfield to the east. Most of the new roads would be narrow, with only one lane in each direction, since automobile use would be discouraged within the NRP area through parking and other TDM policies.

Parking within the NRP area would be centralized in a single large structured parking facility near Highway 101, with a second surface lot on the far side of Hangar 1 to serve the east side of the NRP area and to provide parking for visitors to the California Air and Space Center. The most dense development would lie between the garage and the new light rail station at Ellis Street. Inside Ames Research Center, the primary modes of transportation would be foot and bicycle.

The new TDM program described above in Section B would be implemented. In addition, the provision of on-site housing for employees and students under Alternative 3 would substantially reduce the number of vehicle trips that would normally be generated by the proposed new uses within Ames Research Center. Proposed housing would reduce the gross number of daily trips by approximately 14 percent, and the gross number of peak hour trips by approximately 26 percent. More detailed discussion of project trip generation can be found in Section 4.3.

**4. Alternative 4**

Under Alternative 4, the majority of the proposed new development would be concentrated within the Bay View area, with substantial amounts of new development located within the NRP and Eastside/Airfield areas as well. Alternative 4 calls for a total of approximately 458,000 square meters (4.9 million square feet) of new development. Approximately 258,000 square meters (2.8 million square feet) of existing space would be renovated, including all three of the historic hangars, and roughly 52,000 square meters (560,000 square feet) of existing space in non-historic buildings would be demolished. Total build out under Alternative 4 would be approximately 940,000 square meters (10.1 million square feet), an increase in density of approximately 84 percent. Table 2-9 summarizes and Figure 2-4 shows the land use plan for Alternative 4.

— **NRP.** Under Alternative 4, there would be approximately 145,000 square meters (1.6 million square feet) of new office, research and development, university-related, museum, conference center, housing and retail uses in the NRP area. Approximately 52,000 square meters (560,000 square feet) of existing space would be demolished, and approximately 46,000 square meters (500,000 square feet) would be renovated.

— **Bay View.** Within the Bay View area, Alternative 4 proposes the construction of approximately 251,000 square meters (2.7 million square feet) of new office, research and development, light industrial, university-related, and housing uses.

— **Eastside/Airfield.** Alternative 4 proposes the construction of approximately 62,000 square meters (670,000 square feet) of new office and research and development space, as well as the Regional Fire Training Center within the Eastside/Airfield area. Also within the Eastside/ Airfield area, Alternative 4 proposed the reuse of approximately 72,000 square meters (780,000 square feet) within Hangars 2 and 3 for low density research and development and light industrial space. Table 2-10 lists the new uses included in Alternative 4, which are described above in Section B.

As shown in Table 2-13, Alternative 4 is projected to generate approximately 15,599 new workers at NRP. A total of 2,574 residents would live on-site. Approximately 2,286 of these would live in townhome and apartment units, and 288 would live in student apartments and dormitory units.

a. Open Space

Under Alternative 4, one hole of the golf course on the east side of Macon Road would be relocated. The 1.8-hectare (4.5-acre) central green of Shenandoah Plaza would be preserved, and a new linear greenway parallel to Hangar 1 would be created, restoring the original site plan for Moffett Field. Approximately 29.9 hectares (73.86 acres) of the current open grassland in Bay View would be developed under Alternative 2, including 2.9 hectares (7.4 acres) of new active recreation area. Finally, burrowing owl preserves of 9, 3, and 10 hectares (22, 8, and 24 acres) would be set aside in the NRP, Ames Campus, and Eastside/Airfield areas respectively as described in the BOHMP. This would result in a net loss of 11 hectares (27 acres) of burrowing owl habitat in the Bay View.

b. Security and Circulation

As described above in Section A, under baseline conditions the security fence would be moved to the outer edges of the NRP area and a new gate constructed on Macon Road to provide secured access to the Eastside/Airfield area. Under Alternative 4, the new security fence would be repositioned to the outer edges of the Ames Campus area in order to allow public access to part of the Bay

View area. The fence would also be relocated in the vicinity of the burrowing owl habitat near the airfield at the southern end of the NRP.

As under Alternative 2, the historic roadway network within the Shenandoah Plaza Historic District would be preserved under Alternative 4. The street grid in the rest of the NRP area would be reconfigured to serve the new development parcels, creating a grid pattern that would run parallel to the east/west axis of Shenandoah Plaza, and then shift approximately 45E to parallel Highway 101. The existing grid within the Bay View area would be expanded to serve the new development parcels. No new roadways would be required in the Eastside/Airfield or Ames Campus areas.

Parking would be distributed throughout Ames Research Center in parking structures and surface lots based upon need. During peak parking demand events, such as major events at Hangar 1, large portions of the paved airfield areas would be used as spillover parking. Parking structures in proximity to Hangar 1 and the other visitor attractions would be designed to allow shared use between these facilities and adjacent office building users.

As under Alternatives 2 and 3, the new TDM program described above in Section B would be implemented in Bay View and NRP. In addition, the provision of on-site housing for employees and students under Alternative 4 would substantially reduce the number of vehicle trips that would normally be generated by the proposed new uses within Ames Research Center. Proposed housing would reduce the gross number of daily trips by approximately 15 percent, and the gross number of peak hour trips by approximately 29 percent. More detailed discussion of project trip generation can be found in Section 4.3.

**5. Alternative 5**

Under Alternative 5 there would be new construction in all four development areas, although much of the proposed 330,000 square meters (3.6 million square feet) of new development would be concentrated in the NRP area. Approximately 56,000 square meters (603,000 square feet) of existing space would be renovated, including Hangar 1, and roughly 89,000 square meters

## Table 2-9: Alternative 4 Land Use Summary

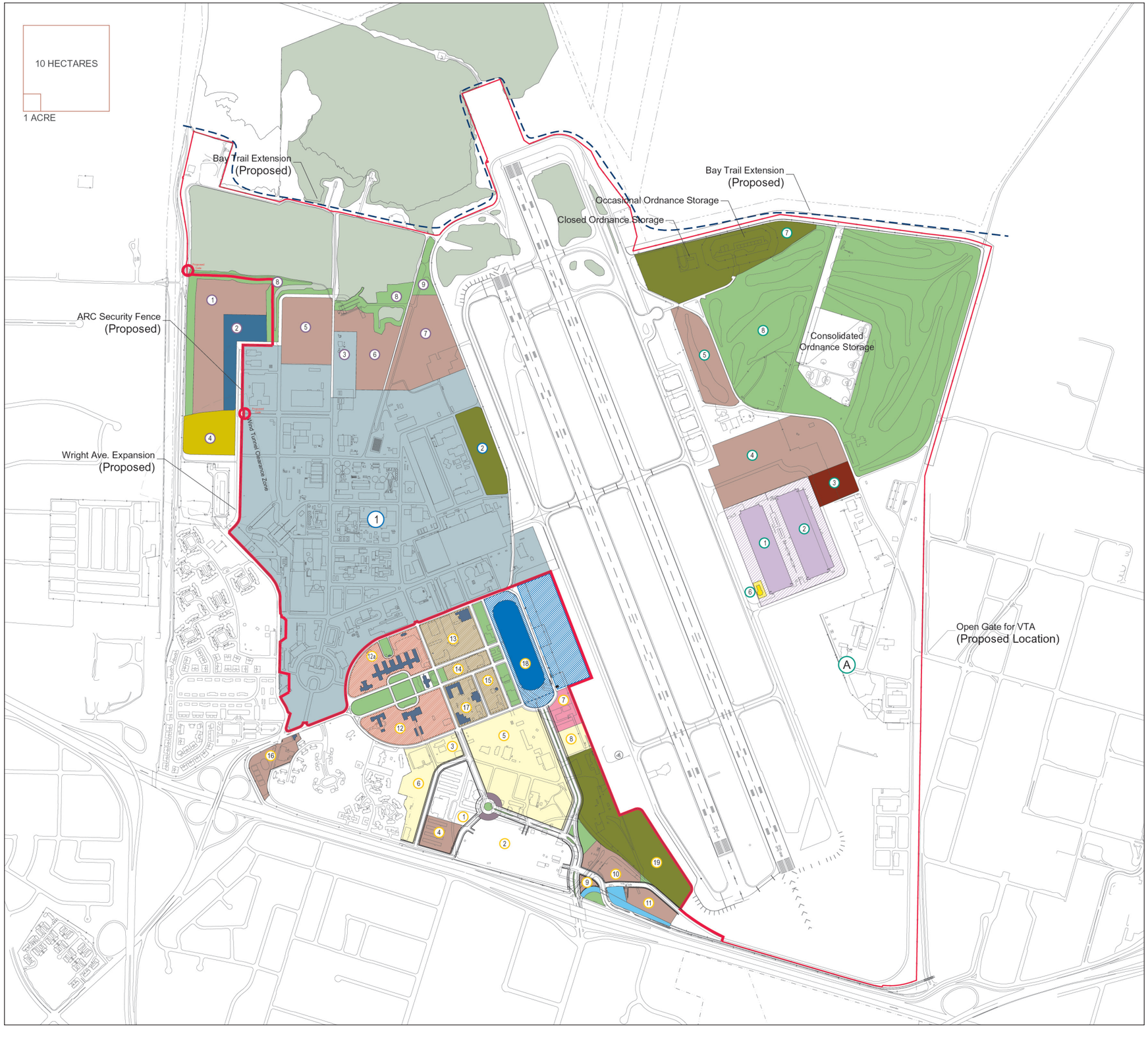
| Parcel | | Land Use | | Parcel Area (HECT) | Parcel Area (AC) | FAR | Developable Area (MS) | Developable Area (SF) |
|---|---|---|---|---|---|---|---|---|
| Ames Campus | 1 | ARC Facilities | | 91.32 | *225.67* | 0.29 | 268,458 | *2,889,658* |
| | 2 | Preserve | | 3.15 | *7.78* | N/A | N/A | *N/A* |
| | | **Sub Total** | | **94.5** | *233.4* | | **268,458** | *2,889,658* |
| NASA Research Park | 1 | Lab Project | * | 3.36 | *8.31* | 0.33 | 11,148 | *120,000* |
| | 2 | Lab Project | * | 7.90 | *19.53* | 0.71 | 55,742 | *600,000* |
| | 3 | University Reserve | | 1.03 | *2.53* | 0.59 | 6,039 | *65,000* |
| | 4 | Partner Parcel | | 1.50 | *3.70* | 0.31 | 4,645 | *50,000* |
| | 5 | University Reserve | | 11.58 | *28.60* | 0.61 | 71,071 | *765,000* |
| | 6 | University Reserve | | 2.88 | *7.11* | 0.86 | 24,619 | *265,000* |
| | 7 | Computer Museum | | 1.26 | *3.11* | 0.52 | 6,503 | *70,000* |
| | 8 | University Reserve | | 1.02 | *2.52* | 0.64 | 6,503 | *70,000* |
| | 9 | Gateway Parcel | | 0.26 | *0.65* | 0.07 | 187 | *2,010* |
| | 10 | Partner Parcel | | 1.90 | *4.70* | 0.27 | 5,110 | *55,000* |
| | 11 | Partner Parcel | | 1.36 | *3.35* | 0.27 | 3,716 | *40,000* |
| | 12 | Historic District | * | 7.91 | *19.55* | N/A | 8,268 | *89,000* |
| | 12a | Historic District | | | | | 1,486 | *16,000* |
| | 13 | Historic District Infill | | 2.31 | *5.70* | 0.20 | 4,645 | *50,000* |
| | 14 | Historic District Infill | | 1.72 | *4.26* | 0.65 | 11,148 | *120,000* |
| | 15 | Historic District Infill | | 1.06 | *2.62* | 0.57 | 6,039 | *65,000* |
| | 16 | Partner Parcel | | 1.85 | *4.56* | 0.28 | 5,110 | *55,000* |
| | 17 | Historic District Infill | | 1.72 | *4.26* | N/A | 4,181 | *45,000* |
| | 18 | C.Air & Space Cntr. | | 5.70 | *14.09* | 0.64 | 36,232 | *390,000* |
| | 19 | Preserve | | 8.83 | *21.82* | N/A | N/A | *N/A* |
| | X | No Change | | N/A | *N/A* | N/A | 6,316 | *67,990* |
| | | **Sub Total** | | **65.1** | *161.0* | | **278,709** | *3,000,000* |
| Eastside / Airfield | 1 | Adaptive Re-Use Hangar 2 (46) | | 6.17 | *15.24* | 0.52 | 32,226 | *346,875* |
| | 2 | Adaptive Re-Use Hangar 3 (47) | | 6.48 | *16.02* | 0.62 | 40,296 | *433,738* |
| | 3 | Training/Conf. Cntr. | | 1.86 | *4.60* | 0.40 | 7,432 | *80,000* |
| | 4 | Partner Parcel | | 10.46 | *25.84* | 0.43 | 44,593 | *480,000* |
| | 5 | Partner Parcel | | 3.99 | *9.86* | 0.23 | 9,104 | *98,000* |
| | 6 | A/C Control Tower | | 0.19 | *0.46* | 0.60 | 1,115 | *12,000* |
| | 7 | Preserve | | 9.82 | *24.26* | N/A | N/A | *N/A* |
| | 8 | Open Space | | 61.28 | *151.43* | N/A | N/A | *N/A* |
| | X | No Change | | N/A | *N/A* | N/A | 7,341 | *79,023* |
| | | **Sub Total** | | **100.2** | *247.7* | | **142,108** | *1,529,636* |
| | A | CANG Master Plan (EA) | ** | | | | | |
| Bay View | 1 | Partner Housing | | 7.47 | *18.45* | 0.82 | 61,316 | *660,000* |
| | 2 | Education Reserve | | 3.13 | *7.74* | 0.89 | 27,871 | *300,000* |
| | 3 | NASA Reserve | | 2.04 | *5.03* | N/A | N/A | *N/A* |
| | 4 | Recreation | | 2.98 | *7.37* | N/A | N/A | *N/A* |
| | 5 | Partner Parcel | | 4.52 | *11.17* | 0.97 | 44,032 | *473,956* |
| | 6 | Partner Parcel | | 6.29 | *15.54* | 0.93 | 58,309 | *627,628* |
| | 7 | Partner Parcel | | 6.45 | *15.93* | 0.92 | 59,311 | *638,416* |
| | 8 | Open Space | | 4.08 | *10.09* | N/A | N/A | *N/A* |
| | 9 | Open Space | | 0.93 | *2.31* | N/A | N/A | *N/A* |
| | | **Sub Total** | | **37.9** | *93.6* | | **250,838** | *2,700,000* |
| Total | | | | | | | **940,113** | *10,119,294* |
| | A | CANG Master Plan(EA) | ** | 44.52 | *110.00* | N/A | 6,020 | *64,800* |
| | | Existing CANG Facilities | | N/A | N/A | N/A | 20,717 | *223,000* |

* *"Preapproved pursuant to the 1994 NASA/MFA Environmental Assessment - Comprehensive Use Plan"*

** *"Preapproved pursuant to the CANG EA Master Plan - Square footage not included in totals*

FIGURE 2.4

# PROPOSED LAND USE PLAN
# ALTERNATIVE FOUR




LEGEND:

- Partner Parcel
- Community Support
- University Reserve
- NASA Reserved
- Recreation
- Adaptive Reuse (Hangars)
- Relocated AT Control Tower
- Training/Conference Center
- California Air and Space Center
- Historic District Infill
- Historic District Renovation
- Historic Buildings
- Computer Museum
- Supporting Retail
- Light Rail
- Preserve (Burrowing Owl)
- Open Space
- Wetlands
- Fence Line
- Bay Trail Extension

*Denotes Parcel Number as Noted on Table 2-9*

- (1) Ames Campus
- (1) NASA Research Park
- (1) Eastside / Airfield
- (1) Bay View

DMJMH+N EDAW

0 76m 152m 305m
0 250ft 500ft 1000ft

**NASA AMES RESEARCH CENTER**
NASA AMES DEVELOPMENT PLAN FINAL EIS

TABLE 2-10: **NEW USES UNDER ALTERNATIVE 4**

| Location | Use | Square Meters | Square Feet |
|---|---|---|---|
| **NRP Area:** | Educational Uses | 74,320 | 800,000 |
| | Computer History Museum | 6,503 | 70,000 |
| | CASC | 36,231 | 390,000 |
| | Conference Center | 17,187 | 185,000 |
| | Housing: | | |
| | 144 800 sf units | 10,684 | 115,000 |
| | 220 1,200 sf units | 24,619 | 265,000 |
| | Office/High Density R&D | 18,767 | 202,010 |
| | Retail and Support Services | 3,252 | 35,000 |
| | **Total New Uses in NRP Area:** | **191,561** | **2,062,010** |
| **Ames Campus Area:** | No new uses under this alternative | | |
| | **Total New Uses in Ames Campus Area:** | **-** | **-** |
| **Eastside/ Airfield Area:** | Office/High Density R&D | 44,592 | 480,000 |
| | Low Density R&D/Light Industrial: | | |
| | Renovation of Hangars 2 and 3 | 79,520 | 780,613 |
| | Other | 10,219 | 110,000 |
| | Disaster Training Center | 7,432 | 80,000 |
| | **Total New Uses in Eastside/Airfield Area:** | **134,763** | **1,450,613** |
| **Bay View Area:** | Educational, Child Care and Support Uses | 27,870 | 300,000 |
| | Housing: 550 1,200 sf unit | 61,314 | 660,000 |
| | Office/High Density R&D | 143,066 | 1,540,000 |
| | Low Density R&D/Light Industrial | 18,580 | 200,000 |
| | **Total New Uses in Bay View Area:** | **250,830** | **2,700,000** |
| | **Total New Uses Under Alternative 4:** | **577,154** | **6,212,623** |

(962,000 square feet) of existing space in non-historic buildings would be demolished. Alternative 5 has a total build out of approximately 777,000 square meters (8.4 million square feet), an increase in density of approximately 61 percent. Table 2-11 summarizes and Figure 2-5 shows the land use plan for Alternative 5.

a. Land Use and Job Generation

Alternative 5 includes the following components for Ames Research Center's four planning areas:

- **NRP**. There would be approximately 192,000 square meters (2.1 million square feet) of new office, research and development, educational, museum, conference center, housing and retail uses in the NRP area. Approximately 52,000 square meters (560,000 square feet) of existing space would be demolished, and approximately 56,000 square meters (600,000 square feet) would be renovated.
- **Bay View**. Within the Bay View area, there would be approximately 93,000 square meters (1 million square feet) of new construction, almost all of which would be devoted to housing and associated uses.
- **Eastside/Airfield.** Alternative 5 proposes the construction of a new control tower.
- **Ames Campus**. Alternative 5 is unique among the proposed alternatives in proposing new development in the Ames Campus area. Alternative 5 includes the demolition of approximately 37,000 square meters (400,000 square feet) of low density buildings to clear room for the construction of approximately 46,000 square meters (500,000 square feet) of office and high density research and development space. There would be a total of 750 additional employees expected in the Ames Campus area.

Table 2-12 lists the new uses included in Alternative 5, which are described above in Section B.

As shown in Table 2-13, Alternative 5 is projected to generate approximately 7,222 new workers at ARC. There would be 2,808 residents on-site.

Approximately 2,228 of these would live in townhome and apartment units, and 580 would live in student apartments and dormitory units.

With additional mitigation, Alternative 5 would have 4,909 residents on-site. Approximately 3,349 of them would live in townhome and apartment units, and 1,560 would live in student apartments and dormitory units.

b. Open Space

Under Alternative 5, the 1.8-hectare (4.5-acre) central green of Shenandoah Plaza would be preserved. A new linear greenway parallel to Hangar 1 would be created, restoring the original site plan for Moffett Field. The Golf Course in the Eastside/Airfield area would be preserved. Approximately 20.4 hectares (50.5 acres) of upland grassland would be developed in Bay View. New active recreation areas totaling 4.7 hectares (11.5 acres) of park space would be added in the NRP Area. There would also be 4.6 hectares (11.4 acres) of new active recreation space in the Bay View area, in addition to 11 hectares (27 acres) set aside as open space there. There would be a new softball diamond of approximately 1.6 hectares (4 acres) in the Ames Campus area. Finally, burrowing owl preserves of 9, 3, 101 and 11 hectares (22, 8, 24 and 27 acres) would be set aside in the NRP, Ames Campus, and Bay View and Eastside/Airfield areas respectively as described in the BOHMP.

c. Security and Circulation

As described above in Section A, under baseline conditions the security fence would be moved to the outer edges of the NRP area and a new gate constructed on Macon Road to provide secured access to the Eastside/Airfield area. Under Alternative 5, the security fence would be pulled in to the outer edges of the Ames Campus area in order to allow public access to parts of the Bay View area. The fence would also be relocated in the vicinity of the burrowing owl habitat near the airfield at the southern end of the NRP.

## Table 2-11: Alternative 5 Land Use Summary

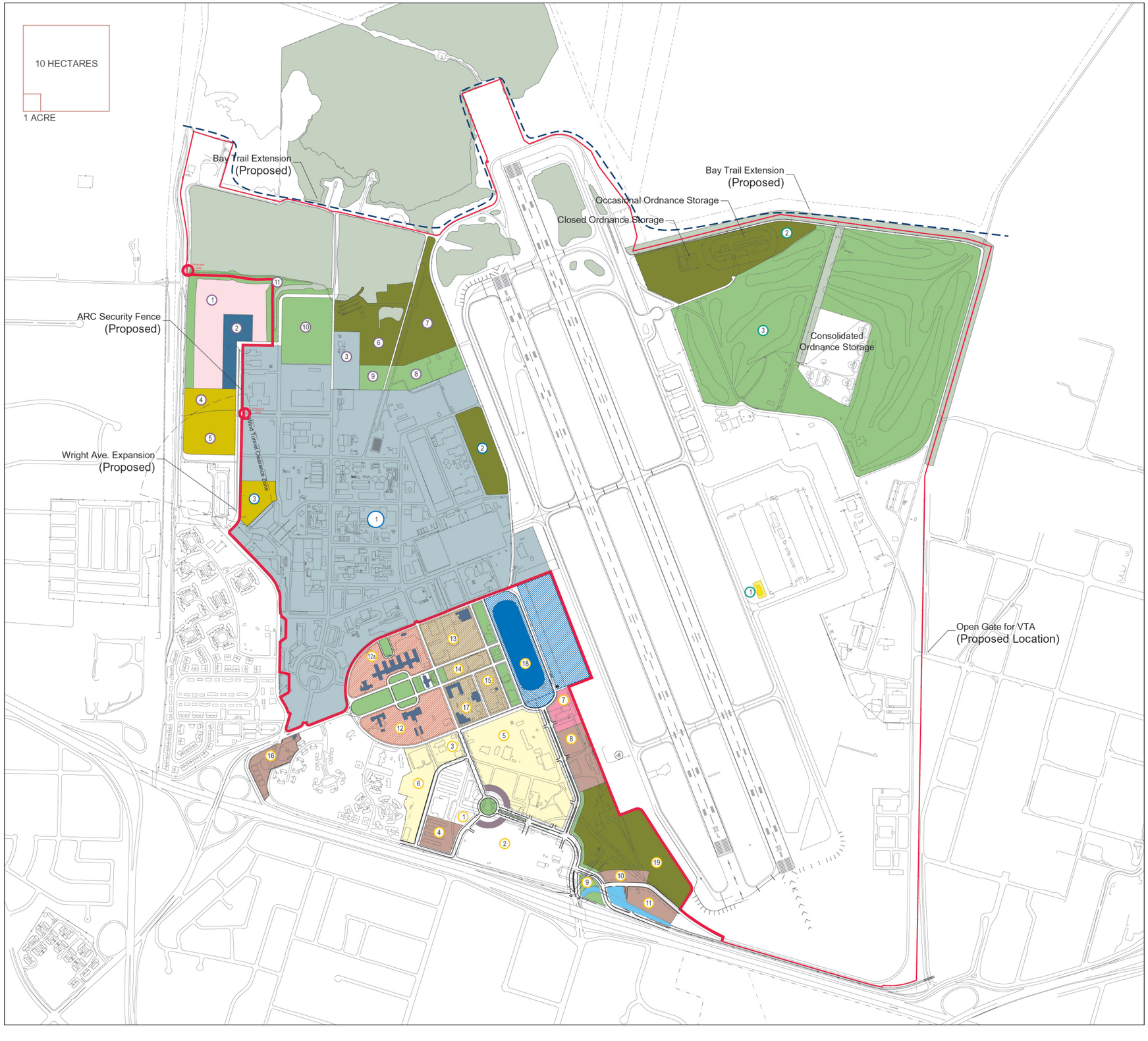
| Parcel | | Land Use | | Parcel Area (HECT) | Parcel Area (AC) | FAR | Developable Area (MS) | Developable Area (SF) |
|---|---|---|---|---|---|---|---|---|
| Ames Campus | 1 | ARC Facilities | | 89.98 | *222.34* | 0.31 | 277,748 | *2,989,658* |
| | 2 | Preserve | | 3.15 | *7.78* | N/A | | *N/A* |
| | 3 | Recreation | | 1.62 | *4.01* | N/A | | *N/A* |
| | | **Sub Total** | | **94.8** | *234.1* | | **277,748** | *2,989,658* |
| NASA Research Park | 1 | Lab Project | * | 3.36 | *8.31* | N/A | 11,148 | *120,000* |
| | 2 | Lab Project | * | 7.90 | *19.53* | 0.71 | 55,742 | *600,000* |
| | 3 | University Reserve | | 1.03 | *2.53* | 0.75 | 7,711 | *83,000* |
| | 4 | Partner Parcel | | 1.50 | *3.70* | 0.18 | 2,661 | *28,645* |
| | 5 | University Reserve | | 11.58 | *28.60* | 0.75 | 86,864 | *935,000* |
| | 6 | University Reserve | | 2.88 | *7.11* | 0.75 | 21,554 | *232,000* |
| | 7 | Computer Museum | | 1.26 | *3.11* | 0.88 | 11,148 | *120,000* |
| | 8 | Partner Parcel | | 2.43 | *6.00* | 0.75 | 18,116 | *195,000* |
| | 9 | Gateway Parcel | | 0.26 | *0.65* | N/A | N/A | *N/A* |
| | 10 | Partner Shared | | 0.77 | *1.91* | N/A | N/A | *N/A* |
| | 11 | Partner Shared | | 1.36 | *3.35* | 0.08 | 1,115 | *12,000* |
| | 12 | Historic District | * | 7.91 | *19.55* | N/A | 8,268 | *89,000* |
| | 12a | Historic District | | | | | 17,280 | *186,000* |
| | 13 | Historic District Infill | | 2.59 | *6.40* | 0.75 | 19,510 | *210,000* |
| | 14 | Historic District Infill | | 0.87 | *2.15* | 0.27 | 2,323 | *25,000* |
| | 15 | Historic District Infill | | 1.06 | *2.62* | 0.35 | 3,716 | *40,000* |
| | 16 | Partner Parcel | | 1.85 | *4.56* | 0.35 | 6,503 | *70,000* |
| | 17 | Historic Dist Reno | | 1.72 | *4.26* | N/A | 4,181 | *45,000* |
| | 18 | C.Air & Space Cntr. | | 5.70 | *14.09* | 0.81 | 46,452 | *500,000* |
| | 19 | Preserve | | 8.70 | *21.50* | N/A | N/A | *N/A* |
| | X | No Change (H D) | | N/A | *N/A* | N/A | 869 | *9,355* |
| | | **Sub Total** | | **64.7** | *159.9* | | **325,161** | *3,500,000* |
| Eastside / Airfield | 1 | A/C Control Tower | | 0.19 | *0.46* | 0.60 | 1,114.8 | *12,000* |
| | 2 | Preserve | | 59.53 | *147.11* | N/A | N/A | *N/A* |
| | 3 | Open Space | | 9.82 | *24.26* | N/A | N/A | *N/A* |
| | X | No Change | | 25.03 | *61.84* | N/A | 79,862.8 | *859,636* |
| | | **Sub Total** | | **94.6** | *233.7* | | **80,978** | *871,636* |
| | A | CANG Master Plan (EA) | ** | | | | | |
| Bay View | 1 | Housing | | 7.35 | *18.16* | 1.14 | 83,613 | *900,000* |
| | 2 | Education Reserve | | 1.93 | *4.76* | 0.48 | 9,290 | *100,000* |
| | 3 | NASA Reserve | | 2.05 | *5.06* | N/A | N/A | *N/A* |
| | 4 | Recreation | | 1.63 | *4.02* | N/A | N/A | *N/A* |
| | 5 | Recreation | | 2.98 | *7.37* | N/A | N/A | *N/A* |
| | 6 | Preserve | | 6.16 | *15.22* | N/A | N/A | *N/A* |
| | 7 | Preserve | | 4.81 | *11.89* | N/A | N/A | *N/A* |
| | 8 | Open Space | | 2.57 | *6.35* | N/A | N/A | *N/A* |
| | 9 | Open Space | | 0.90 | *2.23* | N/A | N/A | *N/A* |
| | 10 | Open Space | | 4.52 | *11.17* | N/A | N/A | *N/A* |
| | 11 | Open Space | | 3.02 | *7.46* | N/A | N/A | *N/A* |
| | | **Sub Total** | | **37.9** | *93.7* | | **92,903** | *1,000,000* |
| Total | | | | | | | **776,790** | *8,361,294* |
| | A | CANG Master Plan(EA) | ** | 44.52 | *110.00* | N/A | 6,020 | *64,800* |
| | | Existing CANG Facilities | | N/A | N/A | N/A | 20,717 | *223,000* |

* *"Preapproved pursuant to the 1994 NASA/MFA Environmental Assessment - Comprehensive Use Plan"*

** *"Preapproved pursuant to the CANG EA Master Plan - Square footage not included in totals*

FIGURE 2.5

# PROPOSED LAND USE PLAN
# ALTERNATIVE FIVE




LEGEND:

- Partner Parcel
- Community Support
- University Reserve
- NASA Reserved
- Recreation
- Relocated AT Control Tower
- Housing
- California Air and Space Center
- Historic District Infill
- Historic District Renovation
- Historic Buildings
- Computer Museum
- Supporting Retail
- Light Rail
- Preserve (Burrowing Owl)
- Open Space
- Wetlands
- Fence Line
- Bay Trail Extension

*Denotes Parcel Number as Noted on Table 2-11*

- (1) Ames Campus
- (1) NASA Research Park
- (1) Eastside / Airfield
- (1) Bay View

DMJMH+N EDAW

0 76m 152m 305m
0 250ft 500ft 1000ft

**NASA AMES RESEARCH CENTER**
NASA AMES DEVELOPMENT PLAN FINAL EIS

TABLE 2-12: **NEW USES UNDER ALTERNATIVE 5**

| Location | Use | Square Meters | Square Feet |
|---|---|---|---|
| **NRP Area:** | Educational Uses | 89,927 | 968,000 |
| | Computer History Museum | 11,148 | 120,000 |
| | CASC | 46,450 | 500,000 |
| | Conference Center and Gym | 25,548 | 275,000 |
| | Housing: | | |
| | 290 800 sf units | 21,553 | 232,000 |
| | Office/High Density R&D | 41,679 | 448,645 |
| | Retail and Support Services | 7,153 | 77,000 |
| | **Total New Uses in NRP Area:** | **243,458** | **2,620,645** |
| **Ames Campus Area:** | Office/High Density R&D | 46,450 | 500,000 |
| | **Total New Uses in Ames Campus Area:** | **46,450** | **500,000** |
| **Eastside/Airfield Area:** | Control Tower | 1,115 | 12,000 |
| | **Total New Uses in Eastside/ Airfield Area:** | **1,115** | **12,000** |
| **Bay View Area:** | Housing: 750 1,200 sf units | 83,610 | 900,000 |
| | Retail, Child Care and Support Services | 9,290 | 100,000 |
| | **Total New Uses in Bay View Area:** | **92,900** | **1,000,000** |
| | **Total New Uses Under Alternative 5:** | **383,923** | **4,132,645** |

As under Alternative 2, the historic roadway network within the Shenandoah Plaza Historic District would be preserved under Alternative 5. The street grid in the rest of the NRP area would be reconfigured to serve the new development parcels, creating a grid pattern that would run parallel to the east/west axis of Shenandoah Plaza, and then shift approximately 45E to parallel Highway 101. The existing grid within the Bay View area would be expanded to serve the new development parcels. No new roadways would be required in the Eastside/Airfield or Ames Campus areas.

Parking would be distributed throughout Ames Research Center in parking structures and surface lots with an emphasis on shared use of parking wherever feasible. During peak parking demand events, such as major events at Hangar One, large portions of the paved airfield areas would be used as spillover parking.

As under Alternatives 2 through 4, the new TDM program described above in Section B would be implemented in the NRP and Bay View areas. In addition, the provision of on-site housing for employees and students under Alternative 5 would substantially reduce the number of vehicle trips that would normally be generated by the proposed new uses within Ames Research Center.

Proposed housing would reduce the gross number of daily trips by approximately 26 percent, and the gross number of peak hour trips by approximately 50 percent. More detailed discussion of project trip generation can be found in Section 4.3.

d. Mitigated Alternative 5: The Preferred Alternative

Under Mitigated Alternative 5, development would be the same as in Alternative 5 above, with several exceptions. In the NRP area, the land area of Parcel 1, which is proposed to accommodates the Lab Project proposed under the baseline, would be decreased. The development potential of this parcel would be kept the same through an increase in the parcel's allowed FAR. The land area of NRP Parcel 6, which is proposed for housing, would be increased, with a corresponding increase in its development potential. As well,

TABLE 2-13: **POPULATION SUMMARY**

| | Alternative Two | Alternative Three | Alternative Four | Alternative Five | Mitigated Alternative Five* |
|---|---|---|---|---|---|
| **EMPLOYMENT FORECAST** | | | | | |
| Office/HD R&D | 4,882 | 5,115 | 7,964 | 2,358 | 2,358 |
| LD R&D/Indust | 2,199 | 1,927 | 2,693 | 30 | 30 |
| University | 5,581 | 3,499 | 4,581 | 4,032 | 4,032 |
| Public/Museum | 106 | 106 | 106 | 115 | 115 |
| Retail | 100 | 150 | 70 | 347 | 214 |
| Conf/Training | 200 | 250 | 185 | 250 | 250 |
| Recreation | 0 | 0 | 0 | 40 | 40 |
| Support | 0 | 0 | 0 | 50 | 50 |
| **Total Employees** | **13,068** | **11,047** | **15,599** | **7,222** | **7,088** |
| | | | | | |
| **POPULATION FORECAST** | | | | | |
| Townhome and Apartment Residents | 1,634 | 891 | 2,286 | 2,228 | 3,349 |
| Student Apartment and Dormitory Residents | 376 | 376 | 288 | 580 | 1,560 |
| **Total Residents** | **2,010** | **1,267** | **2,574** | **2,808** | **4,909** |
| | | | | | |
| **Conference Guests** | **200** | **250** | **185** | **250** | **250** |

* See Chapter 5 for a full discussion of Mitigated Alternative 5.

Sources: NASA Research Park Planning Team; Bay Area Economics, 2001.

a portion of Buildings 19[5] and 20 would be redesignated for use as dormitory housing. This would be in keeping with the historic use of these buildings, which were originally built as enlisted men's and officer's housing respectively. Table 2-14 summarizes and Figure 2-6 shows the land use plan for Alternative 5.

In the Bay View area, the land area of Parcel 1, which is designated for housing development, would be increased, as would the parcel's allowed FAR. This would create the potential for a significantly larger housing development on the parcel. The land area of Parcel 2 would be decreased, resulting in a smaller development potential. Despite the increase in housing potential, there would still be room to increase the buffer between the wetlands and development, as called for in Mitigation Measure BIO-19 as added in this Final EIS. The buffer area would be increased by distributing the open space in Parcel 10 in a new configuration, while leaving Parcel 10's land area the same. Mitigated Alternative 5 would generate 7,088 new employees, approximately 3,000 students, 1,560 residents in the NRP area, 3,349 residents in the Bay View area, and 1,930 housing units within the study area. For a detailed analysis of Mitigated Alternative 5, see Chapter 5 of this Final Programmatic EIS.

## D. Buildout, Analysis Horizon and Phasing

Given constraints imposed by the Clean Air Act, NASA will be limited to construction and operations that generate no more than 91,000 kilograms (100 tons) of ozone precursors per year. This will set a limit on the pace at which construction can occur, and NASA has calculated that buildout of the Preferred Alternative will take approximately 10 or 11 years. Assuming that construction under the NADP commences in 2003, this means that buildout of the Preferred Alternative would be completed no sooner than 2013.

[5] Part of Building 19 would remain office space.

## Table 2-14: Potential Reconfiguration of Alternative 5 to Accommodate Additional Housing

| Parcel | | Land Use | | Parcel Area (HECT) | Parcel Area (AC) | FAR | Developable Area (MS) | Developable Area (SF) |
|---|---|---|---|---|---|---|---|---|
| Ames Campus | 1 | ARC Facilities | | 89.03 | *220.01* | 0.31 | 277,748 | *2,989,658* |
| | 2 | Preserve | | 3.15 | *7.78* | N/A | | *N/A* |
| | 3 | Recreation | | 1.62 | *4.01* | N/A | | *N/A* |
| | | **Sub Total** | | **93.8** | *231.8* | | **277,748** | *2,989,658* |
| NASA Research Park | 1 | Lab Project | * | 2.43 | *6.00* | N/A | 11,148 | *120,000* |
| | 2 | Lab Project | * | 7.90 | *19.53* | 0.71 | 55,742 | *600,000* |
| | 3 | University Reserve | | 1.03 | *2.53* | 0.75 | 7,711 | *83,000* |
| | 4 | Partner Parcel | | 1.50 | *3.70* | 0.18 | 2,661 | *28,645* |
| | 5 | University Reserve | | 11.58 | *28.60* | 0.75 | 86,864 | *935,000* |
| | 6 | University Reserve | | 3.81 | *9.42* | 1.15 | 43,850 | *472,000* |
| | 7 | Computer Museum | | 1.26 | *3.11* | 0.88 | 11,148 | *120,000* |
| | 8 | Partner Parcel | | 2.43 | *6.00* | 0.75 | 18,116 | *195,000* |
| | 9 | Gateway Parcel | | 0.26 | *0.65* | N/A | N/A | *N/A* |
| | 10 | Partner Shared | | 0.77 | *1.91* | N/A | N/A | *N/A* |
| | 11 | Partner Shared | | 1.36 | *3.35* | 0.08 | 1,115 | *12,000* |
| | 12 | Historic District | * | 7.91 | *19.55* | N/A | 8,268 | *89,000* |
| | 12a | Historic District | | | | | 17,280 | *186,000* |
| | 13 | Historic District Infill | | 2.59 | *6.40* | 0.75 | 19,510 | *210,000* |
| | 14 | Historic District Infill | | 0.87 | *2.15* | 0.27 | 2,323 | *25,000* |
| | 15 | Historic District Infill | | 1.06 | *2.62* | 0.35 | 3,716 | *40,000* |
| | 16 | Partner Parcel | | 1.85 | *4.56* | 0.35 | 6,503 | *70,000* |
| | 17 | Historic Dist Reno | | 1.72 | *4.26* | N/A | 4,181 | *45,000* |
| | 18 | C.Air & Space Cntr. | | 5.70 | *14.09* | 0.81 | 46,452 | *500,000* |
| | 19 | Preserve | | 8.70 | *21.50* | N/A | N/A | *N/A* |
| | X | No Change (H D) | | N/A | *N/A* | N/A | 869 | *9,355* |
| | | **Sub Total** | | **64.7** | *159.9* | | **347,457** | *3,740,000* |
| Eastside / Airfield | 1 | A/C Control Tower | | 0.19 | *0.46* | 0.60 | 1,114.8 | *12,000* |
| | 2 | Preserve | | 9.82 | *24.26* | N/A | N/A | *N/A* |
| | 3 | Open Space | | 59.53 | *147.11* | N/A | N/A | *N/A* |
| | X | No Change | | 25.03 | *61.84* | N/A | 79,862.8 | *859,636* |
| | | **Sub Total** | | **94.6** | *233.7* | | **80,978** | *871,636* |
| | A | CANG Master Plan (EA) | ** | | | | | |
| Bay View | 1 | Housing | | 9.33 | *23.06* | 1.19 | 111,019 | *1,195,000* |
| | 2 | Education Reserve | | 0.93 | *2.30* | 0.48 | 4,459 | *48,000* |
| | 3 | NASA Reserve | | 2.05 | *5.06* | N/A | N/A | *N/A* |
| | 4 | Recreation | | 1.63 | *4.02* | N/A | N/A | *N/A* |
| | 5 | Recreation | | 2.98 | *7.37* | N/A | N/A | *N/A* |
| | 6 | Preserve | | 6.16 | *15.22* | N/A | N/A | *N/A* |
| | 7 | Preserve | | 4.81 | *11.89* | N/A | N/A | *N/A* |
| | 8 | Open Space | | 2.57 | *6.35* | N/A | N/A | *N/A* |
| | 9 | Open Space | | 0.90 | *2.23* | N/A | N/A | *N/A* |
| | 10 | Open Space | | 4.52 | *11.17* | N/A | N/A | *N/A* |
| | 11 | Open Space | | 3.02 | *7.46* | N/A | N/A | *N/A* |
| | | **Sub Total** | | **38.9** | *96.1* | | **115,478** | *1,243,000* |
| Total | | | | | | | **821,662** | *8,844,294* |
| | A | CANG Master Plan(EA) | ** | 44.52 | *110.00* | N/A | 6,020 | *64,800* |
| | | Existing CANG Facilities | | N/A | N/A | N/A | 20,717 | *223,000* |

* *"Preapproved pursuant to the 1994 NASA/MFA Environmental Assessment - Comprehensive Use Plan"*

** *"Preapproved pursuant to the CANG EA Master Plan - Square footage not included in totals*

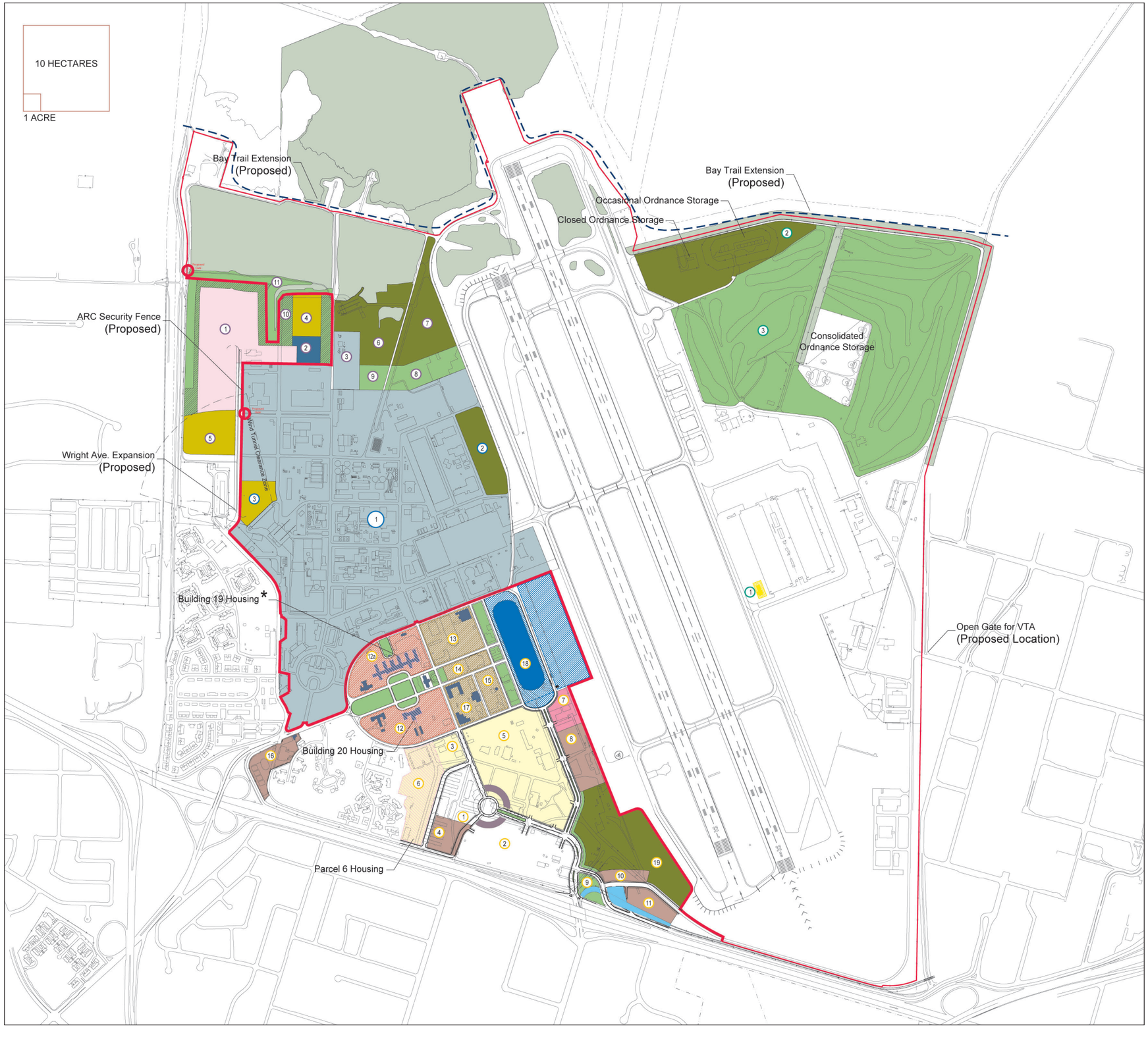
TABLE 2-15: **NEW USES UNDER MITIGATED ALTERNATIVE 5**

| Location | Use | Square Meters | Square Feet |
|---|---|---|---|
| **NRP Area:** | Educational Uses | 89,927 | 968,000 |
| | Computer History Museum | 11,148 | 120,000 |
| | CASC | 46,450 | 500,000 |
| | Conference Center and Gym | 25,548 | 275,000 |
| | Housing: | | |
| | 810 150-800 sf units | 59,458 | 640,000 |
| | Office/High Density R&D | 41,679 | 448,645 |
| | Retail and Support Services | 7,154 | 77,000 |
| | **Total New Uses in NRP Area:** | **281,372*** | **3,028,645** |
| **Ames Campus Area:** | Office/High Density R&D | 46,450 | 500,000 |
| | **Total New Uses in Ames Campus Area:** | **46,450** | **500,000** |
| **Eastside/Airfield Area:** | Control Tower | 1,115 | 12,000 |
| | **Total New Uses in Eastside/ Airfield Area:** | **1,115** | **12,000** |
| **Bay View Area:** | Housing: 1,120 1,000-1,300 sf units | 111,020 | 1,195,000 |
| | Retail, Child Care and Support Services | 4,459 | 48,000 |
| | **Total New Uses in Bay View Area:** | **115,479*** | **1,243,000** |
| | **Total New Uses Under Alternative 5:** | **444,417*** | **4,783,645** |

* Numbers may not total due to rounding.

FIGURE 2.6

# MITIGATED ALTERNATIVE FIVE




LEGEND:

- Partner Parcel
- Community Support
- University Reserve
- NASA Reserved
- Recreation
- Relocated AT Control Tower
- Housing - Bay View
- Housing - NRP
- California Air and Space Center
- Historic District Infill
- Historic District Renovation
- Historic Buildings
- Computer Museum
- Supporting Retail
- Light Rail
- Preserve (Burrowing Owl)
- Open Space
- Wetlands
- Fence Line
- Bay Trail Extension

*Denotes Parcel Number as Noted on Table 2-14*

- (1) Ames Campus
- (1) NASA Research Park
- (1) Eastside / Airfield
- (1) Bay View

* A portion of Building 19 will remain offices

DMJMH+N EDAW

0 76m 152m 305m
0 250ft 500ft 1000ft

**NASA AMES RESEARCH CENTER**
NASA AMES DEVELOPMENT PLAN FINAL EIS

Based on these calculations, this EIS assumes that the buildout horizon for all alternatives would be 2013. The traffic, noise, air quality and infrastructure analyses all model the impacts of the alternatives as they would occur against predicted baseline conditions in 2013.

NASA has formulated a preliminary phasing schedule that breaks NRP development into four phases. The goal of NASA's phasing program is to tie together the number of employees and students on-site, amounts of housing to be constructed, and TDM program implementation. If targets are not met, development would not proceed to the next phase.

NASA's preliminary phasing of housing construction would be as follows:

- TDM Phase 1 - 25% of planned total housing units; 0-2,999 employees/ daytime students.
- TDM Phase 2 - 50% of planned total housing units; 3,000-5,999 employees/ daytime students.
- TDM Phase 3 - 75% of planned total housing units; 6,000-7,999 employees/ daytime students.
- TDM Phase 4 - 100% of planned total housing units; 8,000-9,966 employees/ daytime students.

Retail uses would be phased in as development proceeds. NASA would consider the construction of housing units over retail uses in the NRP area. The Building 19 housing conversion would take place after site contamination issues are resolved, and if the previously built housing is at least 90 percent occupied. NASA would also work with the Army on the use of the military housing, as mentioned in Mitigation Measure SOCIO-1a in this Final EIS. NASA is currently in discussion over allowing NASA substantial additional use of the family housing units. Currently, NASA has access to use up to twelve of their units. In addition, NASA hopes to gain access to a larger number of units exclusively for Ames Research Center. However, the military is working

on privatizing the housing and that may affect the amount of housing NASA can use in the future.

## E. Cumulative Projects

This EIS evaluates the proposed NASA Ames Development Plan against conditions that are projected to occur in the future. This future condition includes both the baseline at Ames Research Center, as defined in Section A of this chapter, and other future projects outside of Ames Research Center, which are referred to as cumulative projects.

The cumulative analysis for this EIS is based on a list of specific projects that are currently proposed in adjoining communities, plus a percent increase to account for currently unforeseen future projects. The list of cumulative projects was developed in conjunction with the cities of Mountain View and Sunnyvale, and is shown in Table 2-16. These projects are not proposed by NASA, and the jurisdictions in which they are proposed will have the responsibility to prepare their environmental documentation. Additionally, the EIS assumes a background growth rate of 2 percent per year for the years through 2003 and 1 percent per year for each subsequent year over the course of the assessment period.

The City of Sunnyvale also has in place the Lockheed Master Use Permit (LMUP), which allows for 782,000 square meters (8.4 million square feet) of new construction on the site of Lockheed Missile and Space Company's Plant 1. Similarly, the City of Sunnyvale is currently preparing a Moffett Park Specific Plan (MPSP) which could allow for up to 1.24 million square meters (13.6 million square feet) of additional new development to the east of Moffett Field, of which 330,578 square meters (3.6 million square feet) is allowed today. Full buildout of the LMUP and MPSP are not specifically considered in the cumulative analysis since it is not known when or if these planning-level documents will be built out. However, all specific projects pending with the City of Sunnyvale and inside the Lockheed Master Use Permit and MPSP areas

are included in the cumulative analysis, and these projects are specifically labeled in Table 2-16. No projects other than those listed in Table 2-16 are currently proposed in the Lockheed or MPSP areas, so the remainders of the building areas allowed by the Lockheed Master Use Permit and MPSP are not included in the cumulative analysis. Other development that may occur under the LMUP and MPSP would be part of the background growth rates included in the cumulative analysis.

## F. Projects Not Covered in this EIS or in the Cumulative Analysis

The following projects have been proposed by proponents other than NASA, but are not sufficiently far enough along in the planning stages to merit inclusion in the cumulative projects list shown in Table 2-16:

- **Relocation of the Commissary and Exchange.** Implementation of the NADP would require removal of the existing Commissary and Exchange, which are located in the NRP area. Replacement of these facilities would not occur under the NADP. If these facilities are replaced, it would occur only after preparation of separate NEPA documentation by the Department of Defense. However, trips associated with the potential new location of the Commissary and Exchange are included in the traffic analysis in order to provide for a conservative analysis.
- **Olympics**. A proposal has been put forward that would involve using Hangar 3 for the press during the Summer Olympics in 2012. In addition, the proposal includes use of the military housing areas as the Olympic Village. The Olympics proposal is not analyzed in this document.
- **Bay Trail Construction**. As described above in this chapter, NASA has agreed to grant an easement for the Bay Trail under the baseline for the proposed project. Construction of the segment of the Bay Trail along the northern border of ARC is not analyzed in this document.
- **Ferry Station**. The Water Transit Authority, which advocates for expanding ferry transportation on the San Francisco Bay, has proposed the

construction of a ferry station at Ames Research Center. Plans for the expansion of the ferry service are speculative at this point. The proposed ferry station has not been analyzed in this document.

— **Charleston Avenue Bridge**. Both the Santa Clara Valley Transportation Authority (VTA) and the City of Mountain View have proposed the construction of a bridge over Stevens Creek that would provide a connection between Ames Research Center and the Shoreline area. This proposal was analyzed as part of this EIS to determine its impact on NADP traffic patterns, as described in Chapter 4.3. However, the bridge was not included in any of the alternatives or in the list of future projects used for the cumulative impacts analysis.

— **Acquisition of Cargill Salt Ponds.** The Cargill Salt Ponds near Moffett Field have been purchased and turned over to the US Fish and Wildlife Service (USFWS). The USFWS will be conducting studies to determine which ponds will undergo tidal wetland restoration. This separate project is not considered in this EIS.

TABLE 2-16: **APPROVED AND PENDING PROJECTS IN MOUNTAIN VIEW AND SUNNYVALE**

| Project Name | Use | Size | Status |
|---|---|---|---|
| **CITY OF SUNNYVALE PROJECTS** | | | |
| Town Center | Movie Theater | 4,000 seats: 7,621 sm (82,000 sf) | Under construction |
| Olson Site | Shopping Center | 5,295 sm (57,000 sf) | Under construction |
| Mozart | Office | 41,805 sm (450,000 sf) | Under construction |
| Ariba | Office | 60,512 sm (651,372 sf) | Under construction |
| Yahoo![1] | Office | 74,041 sm (797,000 sf) | Under construction |
| Synopsys | Office | 11,023 sm (118,650 sf) | Completed |
| Menlo Equities[1] | Office | 24,990 sm (269,000 sf) | Pending |
| Juniper Networks[2] | Office | 232,250 sm (2,500,000 sf) | Approved |
| Sandy Plaza | Office | 7,043 sm (75,810 sf) | Completed |
| Phillips | Office | 20,235 sm (217,810 sf) | Unknown |
| Ouye[2] | Office | 9,410 sm (101,295 sf) | Pending |
| Office + Elks Lodge | Office<br>Lodge | 4,730 sm (50,919 sf)<br>1,456 sm (15,665 sf) | Approved |
| 599 N. Mathilda Ave | Office | 7,042 sm (75,810 sf) | Completed |
| TSH Arch. Office | Office | 1,727 sm (18,600 sf) | Under construction |
| Network Appliance | Office | 19,990 sm (215,186 sf) | Approved |
| Fox Auto Repair | Auto Care Ctr | 780 sm (8,400 sf) | Approved |
| Classic Communities | Retail/Comm.<br>Townhouse | 2,043 sm (22,000 sf)<br>40 dwelling units (d.u.) | Pending |
| St. Mary Apts - Regis Homes | Apartments | 32 d.u. | Under construction |
| Trammel Center | Apartments | 124 d.u. | Under construction |
| First S.J. Housing | Apartments | 30 d.u. | Completed |
| Stowell Site Citation Homes | Single Family | 34 d.u. | Completed |

[1] Moffett Park Specific Plan (MPSP) Area.
[2] Lockheed Master Use Permit (LMUP) Area.

TABLE 2-16: **APPROVED AND PENDING PROJECTS IN MOUNTAIN VIEW AND SUNNYVALE**

| Project Name | Use | Size | Status[1] |
|---|---|---|---|
| **CITY OF MOUNTAIN VIEW PROJECTS** | | | |
| 491 Fairchild | Office | 1,380 sm (14,862 sf) | Completed (not occupied) |
| Fairchild, Veritas | R&D<br>Retail | 37,160 sm (400,000 sf)<br>2,322 sm (25,000 sf) | Completed |
| 575 Middlefield | Office (Expansion) | 6,847 sm (73,700 sf) | Approved |
| 441 Logue | Warehouse to Office Conversion | 2,954 sm (31,800 sf) | Approved |
| 545 Whisman, 441-465 | Office | 36,788 sm (396,000 sf) | Approved |
| 500 Feguson | Office | 21,181 sm (228,000 sf) | Approved |
| 313 Fairchild | Office | 12,077 sm (130,000 sf) | Unknown |
| 615 National | Office | 1,783 sm (19,195 sf) | Approved |
| 425 National | Office | 3,262 sm (35,117 sf) | Approved |
| 1200 Crittenden | Office | 46,450 sm (500,000 sf) | Completed (125,000 sf not occupied) |
| 1950 Charleston (Phase II) | Office | 10,955 sm (117,924 sf) | Approved |
| 400 Castro | Office<br>Retail | 13,272 sm (142,873 sf)<br>819 sm (8,820 sf) | Under construction |
| 861 W. Dana | Office | 5,202 sm (56,000 sf) | Under construction |
| 401 Castro | Office | 2,833 sm (30,500 sf) | 10,160 retail, 20,340 office under construction |
| Bryant/Evelyn | Condos | 44 d.u. | Completed |
| 348 & 364 Bryant | Condos | 20 d.u. | Under construction |
| 2400 El Camino Real - Skyview | Multi-Family | 211 d.u. | Under construction |

[1] Source: Curtis Banks, Senior Planner, Community Development Department, City of Mountain View.